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RARE

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As a prominent British studio with a 30-year pedigree that includes Battletoads, Banjo-Kazooie and Perfect Dark, we have a passion for creating Xbox and Windows 10 games that people love to play. Right now we're focused on shaping Sea of Thieves, a shared world pirate adventure where every sail on the horizon is a crew of real players carving out their own high seas legends.

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"Working for Rare is a once-in-a-lifetime opportunity"

STAFF Q&A: CHRISTINA

Live Campaign Producer. Joined: October 2016

What was it about the Rare vacancy that caught your eye?

I have a very diverse background and have always been a jack of all trades. Live Campaign Producer is very interdisciplinary, so I get to work with all areas of game development. I love being able to work with all the teams and a bunch of different people to bring an idea to fruition.

What was it like deciding to relocate from the US?

Exhilarating! I lived in Florida my whole life so it was a big and scary decision to move. However, working for Rare is a once-in-a-lifetime opportunity I couldn't pass up. Rare and my relocation team really made the transition very smooth, they were there every step along the way, they are the best! And so far the scariest part has been this morning when there was ice on my car.

What's different/unique about Rare's culture?

As Craig Duncan, our Studio Head, likes to say, Rare feels like "the best-funded indie studio". That's very true, you feel empowered to take ownership of something and really nurture it and help it succeed. I love having that responsibility, trust and freedom but also the support that comes from a close-knit studio like Rare if you do need help.

You can see our current opportunities on the inside back page.

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From students to starting a studio, Supermassive talks finding work in games

FINDING FUNDING ■ PARALLEL WORLDS ■ HOW TO HIRE

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develop #178 DEC 16/JAN 17

19 beta

Funding
Developers from all over the industry weigh in on the best way to find funding for your game development projects, while Rob Crossley pitches Creative England's visions of a brighter funding future

06 alpha

PARALLEL WORLDS
Sean attends the Victoria & Albert Museum's first event dedicated to games design and culture

23 beta

A HIRE PURPOSE?
How to ensure you're hiring the right people, and why it's so important

28 beta

GRADUATING TO GAMES
Practical advice for students looking to get into games

37 build

SETTING UP A STUDIO
A look at how a tiny start-up can grow to be Supermassive

96 build

OWLBOY...
How does an indie game stay in development for nine years?

ALSO • 11 Diary Diates • 12 Opinion • 31 Develop Jobs • 48 Post-Mortem • 52 Heard About

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Editorial

JOBS, RECRUITMENT AND FINDING WORK IN THE GAMES INDUSTRY

Usually the Dec/Jan issue of Develop focuses on games industry jobs and recruitment. However, the development landscape is shifting so quickly towards indie games, self-funded ventures and smaller start ups that there are many more people to cater for than just devs swapping from one studio to another.

As a result, we've got features in this issue for everyone from aspiring studio heads thinking of starting a business, to indies seeking funding for their one-man project, to students trying to decide which games course to attend and graduates looking to get their first job in the industry.

There's even something for those of you on the other side of the interview table.

> **It feels like we've had a great year of games, despite whatever else 2016 has brought us.**

With the year finally coming to a close, Shahid Ahmad's article about time seems especially relevant. It feels like we've had a great year of games, despite whatever else 2016 has brought us. The likelyhood of me finishing my backlog from the last couple of months before another deluge of games hits us in early 2017 is dwindling rapidly.

The next few months are looking pretty great, with Mass Effect: Andromeda, Horizon: Zero Dawn and too many other great looking games to list here. Our next issue is the GDC special (yes, already!) and we can't wait to show you our first major changes to the magazine. Please be excited.

Jem Alexander
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alpha
NEWS & VIEWS ON GAMES DEVELOPMENT

FESTIVE CHEER
There's plenty to be cheerful about as we head into 2017
P09

DIARY DATES
Navigate the new month with our complete guide to December
P11

CHOICE
Shahid Ahmad takes on the prickly subject of choice, time and taking risks in life
P13

PARALLEL WORLDS

The Victoria & Albert Museum in London recently held their inaugural Parallel Worlds conference and late event. **Sean Cleaver** went along to watch the talks and find out more about it

There is a line in educational talks beyond which alienation can occur. Sometimes talks are not complex or in-depth enough for the more eager, understanding atendees. At other times they can be too technical and confusing for laypeople. Thankfully, for their first time out, the V&A Museum in Kensington had none of these issues.

The Parallel Worlds event was an inaugural outing for gaming at the museum and the Lydia and Manfred Gorvy lecture theatre played host to a collection of speakers from all different video game development disciplines. A fascinating mix of talented artists and developers from across the industry.

Journalist Simon Parkin introduced the artistic element entitled 'Brave New Worlds', which saw a really interesting exposé into the creation of games as a non-standard design form, with Klondike's Pol Clarissou and Heloise Lozano. It also saw an incredible talk on the journey of art from concept to fruition, as well as a behind the scenes look at UK studio Media Molecule by its art director, Kareem Ettouney.

> **The games I want to make don't exist. That's the whole point.**
> *Kate Gray*

One of the key things that I noticed, aside from the artwork of Media Molecule's upcoming project *Dreams*, were the tools that Ettouney was using, which seemed akin to VR oil painting with hand inputs. Everything in this toolset was designed to aid creativity and that's something that is really pushed at Media Molecule.

Ettouney talked passionately about how the process of desiging and creating is as much to do with feel as it is with function. "People are too embarrassed to say 'it doesn't feel right'," he remarked, looking at the concept art they had created at the studio. He also pointed to the work of James Bond Set designer Ken Adams and his drawings that reflected his points. One quote from the end of Ettouney's talk stuck with me. A sea-faring idiom from a poem by Kahlil Gibran – "Your Reason and Passion are the rudder and the sails of your seafaring soul." It felt like such a good ethos in approaching any project that I'm sure that will be on my mind for years to come.

Next up was 'Playing With History', presented by games journalist and historical researcher Holly Nielsen. Joining her was Simon Mann of Creative Assembly who talked about how their games are broken down by the events and the figures in them, with focus on their most recent

V&A Parallel Worlds conference, (c) Victoria and Albert Museum, London

historical game, *Total War Atilla*. Also joining was Meg Jayanth, writer on *80 Days*, the steampunk interactive fiction game. She went into great depth about 'The Authenticity Trap'.

It was a fascinating talk in which Jayanth argued that just because something happened in a certain way historically, that does not mean it needs to be utterly represented as such in fictional reproductions. The fictitious world of *80 Days* is based in a male dominated era of the late 1800s and the stories of Jules Verne's Phileas Fogg character. But there's nothing to say that we can't put more women in the game in prominent roles.

As the talks went on, we looked at the 'Realities of Virtual Reality' that included talks from Laura Dilloway of *RIGS* developer Guerrilla Games, talking about development of the game, along with Auriea Harvey and Michaël Samyn from Tale of Tales, who spoke about the dangers around the outside perception of using VR. The talks were interesting, especially the lessons that Dilloway imparted from the studio's experience of developing for VR, including point of view positioning, asset sizes and even resolution battles.

The event ended with talks from Holly Gramazio and Keiichi Matsuda on 'Augmenting Reality', but the day didn't stop there as the V&A Late sessions played host to loads more fun activities. There were PSVR demonstrations, a showcase of Code Liberation's recent work, a talk by Holly Nielsen on history in games and DJ sets, including one from Chipzel.

The event saw a huge amount of diversity in its attendees. Men, women, students, interested bystanders and Late veterans were all accounted for.

As I left the festivities it felt good that I'd learned things and seen others engage in great debate and conversation about the topics discussed. Hopefully this success leads to more regular illuminating events in future.

CODE LIBERATION

As part of the V&A Late event, Code Liberation invited their most recent class to show off their projects. Code Liberation holds classes and events aimed at teaching and analysing games and digital industries to women, nonbinary, femme and girl-identifying people. Part of the current class was journalist Kate Gray, who is reporting on her coding journey for Vice's Waypoint, and her game *Awkward Dating Simulator*. I caught up with her to find out more.

"I spent a month in Sweden as part of this game development acceleration incubator," Kate explains. "Based off of that I thought maybe it's time I got to know how to make games, since it was just a really inspiring time. About a month after that I saw people talking about Code Liberation, and I saw them saying 'hey apply', so I thought it would be worth a shot. They're looking for women, they're looking for people interested in game development, they're looking for beginners and I'm all of those things."

The course concluded with the showcase at the V&A and allowed for

> Parallel Worlds is the first event of its kind for the V&A Museum

a great freedom of creativity.

"The stuff we were learning was basic code for a basic game, like a platformer, or a game where you catch things by moving things along a bottom of a screen. People say you should start making a game like that. One that's simple. But I didn't want to. I find it really difficult to commit myself to a project when I don't care about it so I decided to play to my strengths and make a game that was more narrative driven and that encouraged people to connect with each other."

The inclusivity of the classes was something that really appealed to Kate. "It was weird. Every time I go to a game event I am one of one or sometimes two, rarely three women," she explains. "So going into this classroom where everyone was not a dude was like... What? I didn't expect it to have such a profound impact on me. I went to an all girls' school, so I'm used to classes being all women, but coming into this classroom there was a great atmosphere. Everyone seemed to be quite responsive and eager to listen and, I'm generalising quite a lot, but I find that doesn't happen often. It's important to learn with other people. I spent a lot of time at people's houses or Skyping. It's great having a lot of people who know what they're doing, or don't but really want to learn along with you."

Having done a course with Code Liberation, Kate is eager to continue developing. "Knowing games has given me a vocabulary to express what I want, which is the most important thing. I think it was important to step out of the games bubble for a while. Most people I know in games are games developers for money so they make games that can be sold as a product. It's hard to sell a game that isn't a definable thing. So it's important to know that there is that out there, and that it's okay to not want to make a game like that.

"The ones I want to make, to my knowledge, don't exist. That's the whole point of making something. Because it's not really there but you want it to be there, so you make it. I think it's really important that games have got to a point where it's so accessible and, not *easy*, but easy-ish to make games. That if you want to make something, you can.

"There's a little bit of a learning curve, but you can look at the state of games and if you want to add to that, you can." ■

VIRTUAL DISTRACTIONS

Virtual reality has finally made gaming truly immersive, but **Jem Alexander** argues that our greatest achievements are those that knock us right back to reality

By the time you're reading this it'll be mid-December and the PlayStation VR has been on the heads of the general populous for two months. Virtual reality is real now, to the point where it is mundane.

Those of us without high-end PCs and deep enough pockets to get hold of a Vive or Oculus Rift have had two months to get over the novelty of the technology, which is more or less what has happened thanks to a dearth of quality post-launch games for the device.

Which is understandable. The launch lineup was pretty spectacular, compared to similar peripheral launches in the past. The second wave of games will need to start delivering on the promises that early proof of concept titles like *Batman: Arkham VR* and *VR: Worlds* made.

But it's not the lack of deep experiences that is my biggest bugbear about the PlayStation VR experience right now. Honestly, I'm still trying to find the time to finish all the PSVR launch games between the giant huge releases like *Watch Dogs 2* and *Final Fantasy XV* which – surprise! – have turned out to be pretty damn good.

No, the biggest concern I have with virtual reality at the moment is to do with PlayStation trophies. I've never been a fan of the idea of games being immersive. Captivating, maybe. Absorbing, definitely. But I've never felt that I'm *immersed* inside a game and have often scoffed at the idea that something in a game could be so jarring that it brings you 'back to reality'. The TV screen between me and the virtual world was always enough to keep the two separate. With virtual reality, that all falls away. It is *truly* immersive.

Which is why Sony's decision to not include visible trophy notifications in VR is so confusing for me. Here's an experience that transports you to another world and asks you to believe in a new normal, then periodically draws your attention back to reality with a variety of beeps, chirps and chimes.

These system sounds are intensely distracting, because the only way to interact with whatever is making them is to leave the VR experience. Sure, the lack of a visual pop-up might mean your view from the cockpit of your *EVE: Valkyrie* space fighter isn't obscured, but it leaves an irritating itch right at the back of my skull.

> **It's an almost physcial pull, drawing me back to the real world and away from my gaming experience.**

If I hear that trophy chime I'm pulled straight out of the game and forced to wonder 'what did I do to deserve that?'

Likewise with a system notification, I'm left curious about what is happening back on planet Earth. It's an almost physical pull, drawing me back to the real world and away from my gaming experience. Surely that's more distracting than a quick in-game pop-up that delivers the relevant information and disappears after a second or two?

Clearly I'm confused enough by this decision to write an entire op-ed column on the matter, even while the world burns outside my window in the wake of Brexit, Trump and the rest of 2016's delightful offerings.

There are more pressing matters, certainly and, as Sean says on the opposite page, much to look forward to. But I'm writing a magazine for game developers and so I feel inclined to ask, what can be done to fix this frankly confounding oversight?

Games such as *Tumble VR* have integrated trophy notifications into the game's UI, so that you can at least see why your machine is pinging at you without escaping the game experience and returning to our crumbling society. Unfortunately, if you happen to be looking in the wrong direction when the notification is displayed, you're back to square one.

A solution is out there, I'm sure. If you're as annoyed by granular tech inconveniences as I am, maybe you're already working on a fix.

If not, then I hope my neurotic concerns about the trivialities of modern life has been a welcome distraction from your own, or perhaps it'll even give you something to consider for your next VR title. ■

Sean Cleaver insists It's not all doom and gloom as he looks ahead to 2017

REASONS TO BE CHEERFUL

Yes, the title is the Ian Dury and the Blockheads song that Charlie Brooker used to punctuate 2015. Hopefully this time around he chooses something that reflects this year, probably some kind of demonic operatic aria, or the theme music for The World At War. Anyway, I think we can all agree that for the world, 2016 has been an absolute stinker.

However, this has been an incredible year for video games. In fact, in critical circles, this has been akin to 2007 in amazing titles. *Overwatch*, *Titanfall 2*, VR, 4K – It's been a critical year. Even *The Last Guardian* came out which, like The Eagles promised, must mean that hell has frozen over. However I am cautiously optimistic for 2017.

THE FOUR-K HORSEMEN

According to our sister publication MCV, GfK predicted there will be three million 4K TVs in our homes by the end of the year. Though personally, I don't think that it'll be the revolution for games consoles we hope it will be, at least not yet.

Back in 2007 there were a lot of outside factors contributing to HD's success. The cost of digital HD subscriptions became a lot more affordable. Major broadcast companies were future proofing and filming in HD. Televisions also became a lot more affordable in the UK because of the start of the analogue signal switch off. Everything was turning digital and consoles leapt at it. This decreasing cost and the expendable income of the country (or at least their credit limits) meant everyone could cope with getting a new 50" behemoth.

In 2016 the currency is a little anaemic and pockets are a little tighter. There's either a large group of people who were burned by 3D, decided to wait until it died down or have just recently got a super big HD TV with all the smart OS trimmings. That's before an extra £350 for a 4K capable gaming device. The install base may well be too small in the first year to justify the extra cost of producing for it. Let alone the current state of the technology when it comes to HDR, input lag and setting up the TVs to use it.

VIRTUAL INSANITY

Moreso than 4K, the cost of VR is coming down at an alarming rate. Even during Black Friday sales, the cost of a VR capable PC and Oculus unit went below $1,000. If anything can be said about the apparently successful launches of VR it's that there wasn't enough PSVR's available.

With the hype, the critical acclaim and the influencers playing it on our YouTube subscription feeds, the next run of stock has felt an age away. I've showed it to groups of friends who would have brought it there and then. It's a word of mouth experience, but a powerful one and the install base would have been possibly double what it currently is if there was more stock sooner.

This is only a problem because I'm guessing that people who've decided to develop for the medium are in it for the long haul. Which means it'd be brilliant if more people were confirmed to have the device. Aside from some, the games have been relatively well priced to allow users to get the most games they can and those sales can only grow.

BETTER THAN THE LAST

Reasons to be cheerful? Well, firstly, the technologies are here, which is amazing. They are 'affordable' and while the wider market might not be as ready for them as it was a decade ago, it is getting larger. I'm not entirely sure I won't be here next year saying that the early adopters weren't burned with the coming advances. But I am sure that things will grow.

There will be a larger install base for both 4K and VR. There will be further developments in VR engines and the scope of developers creating experiences and games for it. There will be new consoles that will challenge what gamers will want to play and how they will play it.

As we head in to 2017, it's only fair that we look at the state of games. There are over 50 million current-gen consoles out there and VR for every level of gamer. 2017 has seen great results and the start of risk being taken in AAA games. As Counting Crows sang: "a long December and there's reason to believe maybe this year will be better than the last." Here's hoping. Cheers. ■

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Sumo are looking for world class talent across all disciplines for both our new Nottingham Studio and our HQ in Sheffield.

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AT A GLANCE

DECEMBER 25TH
Christmas Day
I know, you already know. We just enjoy pictures of lovely food.

JANUARY 1ST
New Year's Day 2017
Quite literally a new start. Let's hope it's not as cruel as 2016 was.

JANUARY 20TH
Inauguration Day
Whatever your feelings, this is the day we start the era of The Donald

JANURARY 24TH
Resident Evil 7: biohazard
The next instalment of the horror franchise that makes the leap to VR

JANUARY 28TH
Chinese New Year
Fireworks and plenty of red as we celebrate the Year of the Rooster.

DIARY DATES

Game Connection America 2017
February 27th
San Francisco, California
www.....

JANUARY

Pocket Gamer Connects 2017
January 16th, London, UK
pgconnects.com/london

Ludicious Zurich Game Festival 2017
January 26th, Zurich, Switzerland
ludicious.ch

PAX South 2017
January 27th, San Antonio, Texas
south.paxsite.com

Australasian Conference on Interactive Entertainment 2017
January 31st, Canberra, Australia
ieconference.org/ie2017/

FEBRUARY

Casual Connect Europe 2017
February 7th,
Berlin, Germany
europe.casualconnect.org

White Nights Prague 2017
February 13th, Prague,
Czech Republic
wnconf.com/

International Conference on Game Jams, Hackathons and Game Creation Events 2017
February 26th,
San Francisco, California
icgj17.gameconf.org

EVENT SPOTLIGHT

GAME DEVELOPERS CONFERENCE (GDC) 2017
Where: Moscone Center, San Francisco, California, USA
When: February 27th – March 3rd 2017
What: The worlds largest professional game industry event, attracting over 27,000 attendees withover 500 lectures, panels, workshops and an expo for design tools, platforms and services
www.gdconf.com

COMING SOON

DEVELOP #179
THE GDC ISSUE
We'll be back at GDC again for 2017 and this time, we'll be bringing a custom designed magazine especially for the event. We'll be changing our regular sections to help reflect the tracks that will be at the Game Developers Conference so you know what not to miss.

DEVELOP #180
THE HUMAN ISSUE
A first for Develop and quite possibly our most ambitious issue yet (until later this year... tease). We look at how you use, improve and take care of the greatest creative tool in the video games industry – You. We're looking for any stories and experience so please get in touch and share.

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CULTURAL DIVERSITY IN GAMES CAN POSITIVELY IMPACT YOUR BOTTOM LINE

SuperData's **Stephanie Llamas** investigates the reasons racial and ethnic diversity are underrepresented in games, and the effects that this has on their audiences

I first found Iran's fascinating catalogue of games while researching propaganda in graduate school. The one that really stood out to me was *Quest of Persia*. The game centres on the ongoing conflict between Iraq and Iran. It was not the first time I'd seen Iraqis depicted as antagonists, but it was certainly the first time I'd seen Iranians as the good guys. As I continued to probe, I found that there were not only games depicting regional conflict, but also games reversing the role of Arab and American.

The same 'us vs. them' narrative used in so many western titles where white men are good and brown men are bad was being used in reverse. And it makes sense; as a gamer you want to see yourself as the protagonist, but what if you look more like the other team?

Women have recently been the focus of the 'diversity in games' conversation, but it's not often that we consider diversity beyond gender. As sizable communities of colour and growing immigrant populations play more games, they provide game developers with new audiences and opportunities for engagement and revenue.

In mass entertainment media, minority representation has grown and been applauded, but the games industry – a bastion of innovation in so many areas – has fallen behind. If minorities are underrepresented in games, then the implication is that people like them are outsiders, and so they are outsiders in the gaming community, too. But why should developers care? The bottom line: their bottom line.

MAINSTREAM MINORITY

On the surface, it may seem unreasonable to task developers with changing perceptions of race and skin colour. Isn't their job to make good games that offer compelling and fun experiences? It's true that they are not solely responsible for changes to racial and ethnic perception, but acceptance is bred from representation. TV networks, production companies and record labels have increasingly incorporated and served minority consumers, understanding the growing profile of their audiences.

Through these efforts, women and people of colour like Mindy Kaling and Trevor Noah have reached out to new audiences while still resonating with white Americans.

Acceptance abets a stronger sense of belonging, and the more people who feel at home in the gaming community, the more opportunities there are for participation, engagement and monetisation.

> **The more people who feel at home in the gaming community, the more opportunities there are for monetisation.**
> *Stephanie Llamas*

The games industry still struggles to be taken seriously, and one way it is trying to change that is by aligning itself with other media. Games are not just about games anymore: gaming video content, eSports, brand participation, and virtual reality are all

ways in which the industry has reached outside itself for a larger audience and an expanding presence of validity. But the greater its exposure, and the more diverse its audience, the more developers and publishers need to adapt in order to see a return on investment.

THE PERCENTAGE GAME

More than a quarter of US gamers are non-white, with the console audience boasting 31 per cent. Console games are the least likely to feature non-white protagonists and account for 18 per cent of the US market. But fewer than five per cent of big titles feature a main character who is not white, with most of those protagonists being African-American. Meanwhile, Hispanics represent the highest minority gamer group at ten per cent, while just eight per cent are black, and yet they are far underrepresented as protagonists and overrepresented as antagonists. If you dig even deeper, you still won't find Middle Eastern protagonists whose ethnicity does not hinge on the narrative. In fact, Middle Easterners are most likely among minorities to be antagonists in combat gameplay.

Treating games as media serves to push engagement because the more involved gamers are, the more effectively they monetise. But limiting the access brands have to different demographic profiles limits advertising opportunities. Players of all backgrounds need to feel they are invited to participate in order to settle into a community, and until they feel a part of that community, they are less likely to invest their hard-earned cash.

I've never known what it's like to play as a protagonist with my ethnic background. I've fought against Colombians and Lebanese, but never as one. I've never imagined that the pride I get as a woman playing as Elizabeth in *Bioshock Infinite* or Faith in *Mirror's Edge* could extend to seeing my culture shine onscreen. And when I have the opportunity to, I'm definitely buying that game. ■

Stephanie Llamas is director of research and head of VR/AR strategy at SuperData Research
www.superdataresearch.com

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Version management - innovatie studios explain why it is so critical to successful game development
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THE HARD PROBLEM OF CHOICE

Shahid Ahmad contemplates how age affects the ways we approach choices and how sometimes, taking risks is more important than a comfortable life

I probably have more yesterdays than tomorrows, and that's why I left PlayStation when I did. I could have stayed and continued to enjoy a great career, but I just had to try to make games again. I couldn't do both, so I had to choose.

Most of us don't track our time by the minute, I suspect some of us would just be a little afraid to find out how much of our time we're wasting. We pick up our smartphones with a thought in mind, we see some notifications and the thing we were going to do is temporarily forgotten, then off we go into the whirlwind loop and before we know it, we've lost 15 minutes. We sit down to watch a film on Netflix with a loved one, and suddenly we've wasted half an hour scrolling through the infinite, sparse set: unlimited choice, but nothing that you want to watch.

Life is made up of time – how much, none of us know. Choice is paralysing, and it's increasingly becoming one of the most insidious wastes of time there is, which makes it a waste of life. When we talk of time management, what we really mean is priority management. There can only really be one priority at any given moment, but we've fooled ourselves into thinking that priority can be pluralised. It can't. There aren't two of you, so you must choose. The best way of choosing is being conscious of your priority at any given moment, then acting immediately, according to that priority.

How can we be conscious of our priorities? Well if we left that to our unruly brains, we'd forever be paralysed by choice. This is where pen and paper are so useful – you can use a digital equivalent, but I find that too distracting. Write down what your priority is and keep it in front of you. Carry a small index card and look at it regularly. Better still, make your priority a screensaver on your phone. Whenever you pull your phone out, you'll know there is something more important you must be doing.

> **Choice isn't difficult when there are lots of bad options and very few good ones.**
>
> *Shahid Ahmad*

WERE IT SO EASY

Choosing isn't easy. The problem of choice is essentially deciding what you're *not* going to do. When I decided to make video games, the corollary was that I could no longer work at PlayStation. Choice isn't difficult when there are lots of bad options and very few good ones. Choice is difficult when there are lots of good choices with nothing that stands out.

How does this relate to games development? Think of a storyline for your game. To achieve a coherent storyline, you have to discard all the ideas you'd like to include to focus on the very few that will work. This doesn't mean you can never include those ideas. It just means that for *this* game, you are sticking with just the one, or the few that matter.

FOCUS ON SOMETHING

Think of game mechanics. Sure, you could throw in a whole bunch of game mechanics, particularly if you're an independent developer with limited resources who can't necessarily achieve outstanding production values in depth for every part of your game. Better to focus on one, or very few, and make those work throughout.

To succeed in the video games business as an independent developer, you must be exceptional. You don't have to be, and more than likely cannot be, exceptional in all areas. The reality of independent development is that you need some basic competence or understanding across a wide range of disciplines, but decide on the one thing that will separate you from the crowd and work on that.

Any meaning in your game development life depends on it. ■

Shahid Ahmad is an independent developer, and previously head of a strategic content at SCEE. You can find him on Twitter at **@shahidkamal**

Is VR and AR in the social casino industry a reality?

http://bit.ly/2fSmNwl

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DEVELOPMENT FEATURES, INTERVIEWS, ESSAYS & MORE

FINDING FUNDING
Developers weigh in on how to fund your game
P20

HOW TO HIRE
An in-depth look at the the hiring process from the perspective of the employer
P23

ADVICE FOR STUDENTS
What should graduates know before seeking work?
P28

BREXIT: THE FUTURE OF THE UK GAMES SECTOR

Dr Jo Twist OBE insists that access to diverse talent, both home-grown and imported, must be maintained post-Brexit in order to ensure the continued success of the UK games industry

Access to diverse talent is the number one concern raised by games businesses after the referendum last June. Our post-referendum survey highlighted that up to 30% of games business employees are EU citizens. While there is currently friction free access to this talent pool, there is the risk that barriers could be introduced in the future as a result of the decision to leave the EU.

As part of a global industry, our growth relies on bringing together top technical, business and creative talent from across the world, with different skills, experiences and perspectives. This is alongside ensuring that there is a steady flow of home-grown diverse talent entering the industry.

This skilled workforce benefits not only games and interactive entertainment companies, but other sectors of the UK economy which rely on technical and creative talent to drive innovation. Following the referendum result, games businesses must continue to have frictionless access to the diverse and highly skilled talent they need to grow and remain competitive. Therefore, in the short term, Government should guarantee the status of EU nationals performing vital roles for the UK games industry now and in the future.

DYNAMIC IMMIGRATION

At Ukie we believe that in the long-term there is an opportunity to develop a more dynamic immigration system that reflects the fast moving nature of the sector and the demand for the highly skilled jobs required to make and sell games in the UK.

Meanwhile, it is now more crucial than ever for Government to develop a long-term strategy to up-skill the UK's population to ensure that talent shortages don't impact our industry's current and potential growth. There remains a skills gap in the UK which Ukie and the wider games sector has been addressing over the last few years. Through our Next Gen Skills campaign we successfully called for the introduction of computer science to the national curriculum, and our ground-breaking Digital Schoolhouse programme, powered by PlayStation, is inspiring schoolchildren and teaching the teachers about creative computing and play based learning.

> **The UK remains in a strong position as a world leading games scene.**
>
> *Dr Jo Twist OBE, CEO of Ukie*

Ukie is taking to the road for three months from December to February for our Brexit Roundtable Tour. As an evidence-based body, we want to gather thoughts and ideas from games businesses of all sizes across the UK about their post-referendum concerns, and work together to examine opportunities for the sector to be better supported in a post-referendum UK. We are, after all, in the business of creative problem solving and there has never been a better opportunity to tell the UK government what we need to change or introduce to continue to be competitive.

INVEST IN TALENT

While there are clearly a number of concerns arising from the referendum result, we remain in a strong position as a world leading games scene. We have a government that continues to support and listen to the sector , some amazingly talented teams, and a great business environment. We need to continue to build on this. For instance, at Ukie we are continuing with our global trade and investment programme, including Games London, helping hundreds of UK businesses to reach overseas investors and markets – spreading the word that the UK continues to be open for business.

Finally, the best way to ensure that the games sector is properly represented during the upcoming Brexit negotiations and Industrial Strategy is to act together as a powerful single voice to Government. We'll be diving deeper into all these questions during our Brexit roadshows, and want to hear from you on these and other issues. Make sure to sign up to one near you at Ukie.org.uk/Brexit-tour. ■

Dr Jo Twist OBE:
I've been CEO of Ukie since 2012. Before this I was Channel 4's Commissioning Editor for Education, where I commissioned Digital Emmy-winning Battlefront II, free to play browser and iOS games, (Sweatshop, Nomnation and International Racing Squirrels) and social media projects. I'm a London Tech Ambassador, a VP of Special Effect, and am on various boards and advisory groups, including the Bafta Games Committee.

UBI-SERVICE

Games and the ways that people consume them have evolved. **Sean Cleaver** talks to Anne Blondel of Ubisoft to see how the publisher is approaching gaming as a service from here on out

Rainbow 6 Siege is about to enter its second year with a full ream of new content. The game started life as a slow burner, but has become one of the stand out choices for gamers looking for a new competitive tactical shooting experience.

Part of this is down to the fantastic community behind the game who have stuck with it over the course of the year. Listening to the community has been a big part of Ubisoft's new policy of providing games that operate as a service rather than as a yearly release.

"It's been in store for us for quite a long time," says Anne Blondel, VP of live operations at Ubisoft. "The gamers want to experience their games, not just a beginning or an end, but they want it to last forever."

Blondel's experience in games with longevity was bolstered while serving as executive producer on *The Crew*. "When you make a promise to gamers to be committed to them you have to keep it by listening to them and understanding what they are looking for," she says. "It's what we've been applying on *The Crew* for two years.

"*Rainbow 6 Siege* has been rebooted [to be] a competitive live game. From the beginning it was our intention, but it's up to the gamers if they wanted to stay with our game. We made sure that once we launched we went through fixes, patches and extra content for the community so they can make our games their games."

This sounds like it can have repercussions when it comes to generating sales, creating new games or even making profit from the existing options, but Blondel believes this approach is the future. "If we were to push the envelope even further, maybe there wouldn't be another game, a next game. Instead, there'd be an expansion to the game over and over. As long as the gamers are craving for that game and for that kind of horizontal experience, we'll keep pushing in that direction and when we feel that the gamers are looking for something fresher and different then we can build up the other game next."

DIVIDING LOYALTIES.

A lot of these lessons have been learned through up to the minute analytics of the game. What's working, what isn't, what's being played and – crucially – how long it's being played for. That's nothing new, but it's the ability to have a plan and adapt it to the needs of the gamer that is a key point in this vision. "Looking at the players that were still playing [*The Division*], something wrong was happening and we didn't know what," Blondel says. "So we talked to the community and realised that it was better for everybody to push back some DLC's.

> There's no-one between the gamers and devs anymore
> *Anne Blondel*

"We had a critically acclaimed launch, it was amazing, best launch ever for Ubisoft. We had those players engaged and coming back and they were there, but not as much as we wanted them to be. We realised it was up to us to make them come back. Let's not speed up extra content, let's settle down everything that was tricky for the players and start fresh again."

This is all thanks to a direct connection between developer and player. "There's no-one between the gamers and developers any more," Blondel says. "We see by the minute what they do and don't like, so it makes us more enthusiastic about providing the revision for gamers as they can see the impact right way. The impact can be positive or negative but it's still fulfilling for them."

In the future, flexibility as well as solid planning will be key. "We plan a full year of content, so we're ready to provide and then adjust according to feedback and how players are consuming the content."

As with any kind of relationship between the developer, the publisher and the gamer, honesty is key. Especially for long term retention of your players. "It's not just money they're taking but time and friends so they need to be happy about it.

It's like getting in a serious relationship, you're not there to fool around with the gamers. You need to be true to your word. They're educated and competition is fierce. They'll understand if there are difficulties in providing content but be true, be honest and do it." ■

FUNDING

Money is a necessary evil when it comes to the development of video games. **Jem Alexander** asks indie devs in the UK for advice on where to go and how best to secure funding

Getting into the games industry isn't always a case of joining an established studio. For those of you with a game in your head already, you're looking for the autonomy to work on your own project. Perhaps you want to start your own production house (see page 37 for our full feature on *Setting Up A Studio*), or perhaps you'd rather go it alone. Either way, you're going to need money.

Thankfully, there are numerous different avenues through which independent game developers can find finding in the UK. "I think there are a diverse range of funding sources," says Gavin Price, managing director of Playtonic. "Particularly in the UK. These include publishers looking to disrupt the market place, regional growth funds and industry-based funding too, such as Creative England."

Alexander Sliwinski, COO at Bithell Games, agrees. "The diversity of opportunity currently available is some of the greatest the industry has ever seen. The key is picking out where your particular game will find funding that lets you grow instead of being shackled with debt."

This breadth of choice, like a well-stocked Steam library, can lead to decision paralysis and anxiety. "It can be confusing or uncertain as to which is the best to aim for," argues Olly Bennett, managing director of Cardboard Sword, developers of *The Siege And The Sandfox*. "Equity, revenue, SEIS, SPVs, recoups, grants, crowd-sourcing, finishing-funding, match-funding, and so on. Each requires a very different approach, attitude, level of preparation, sacrifice, up-front cost and so on. It's hard to be certain you've picked the right path. We're devs, not financial experts, and some of these schemes have terms attached to them that can be intimidating or cause big problems for the unaware."

The best way around this, many agree, is to seek advice. The games industry, particularly indie developers, are largely an open and collaborative lot. Not only will this help you decide which funding avenue is the best fit for you, but other devs who have been through games funding will be able to give advice about publishers, development costs and more.

> **There are quite a few new and established digital-focused publishers doing very well these days.**
>
> *Gavin Price, Playtonic*

"The most useful information we got was from speaking to other developers who had or were currently working with publishers we were considering," says Phil Duncan, co-founder of Ghost Town Games, creators of *Overcooked*. "One of the great things about the indie scene is that there's a lot of open communication between developers and that was a great way to discover what deals were on offer and where the various strength and weaknesses were for different publishers."

Alexander over at Bithell Games makes the important point that knowing how much money you're going to need for your project is vital when pitching for funding, and the best way to figure that out? "Speak to other independent developers in your area and get the true cost and time involved in completing a game of your scale." Sounds obvious, but gaining advice from people with real-world experience is something that can't be overstated.

You may want to cast a wide net for this, too. "Find someone that knows the industry well, then find a second opinion," Cardboard Sword's Bennett say. "Because everyone is biased, but thinks they're an expert."

Once you've decided on a funding platform, the next trick is to keep a level head, put together a solid pitch and, most importantly, prepare to fail.

"There are no quick wins," says John Connor, programmer and designer on *Empires of the Undergrowth* at Slug Disco Studios. "You have to keep applying, trying and proving yourself over and over. It is very difficult to find funding if you do not have a proven track record, but it is possible with persistence. Do not expect to get everything, get used to rejection and keep trying. If you are confident about your game concept it is just a matter of persistence and others will see the value."

James Parker, of Bristol-based indie developer Ground Shatter Games, has had his fair share of rejection. "I've definitely been turned down for funding a lot more often than I have been accepted. But where I have been successful, it's made a huge impact to me and to my business.

"Don't give up, but be flexible. I've seen plenty of people who have ruled out funding completely because they've been turned down before, but the people who often make it are the ones who are persistent, learn from their mistakes, and who are willing to adapt to each new funding opportunity as it comes along."

The good news is, once you've got some money, you'll find it much easier

Slug Disco has found funding success through Kickstarter

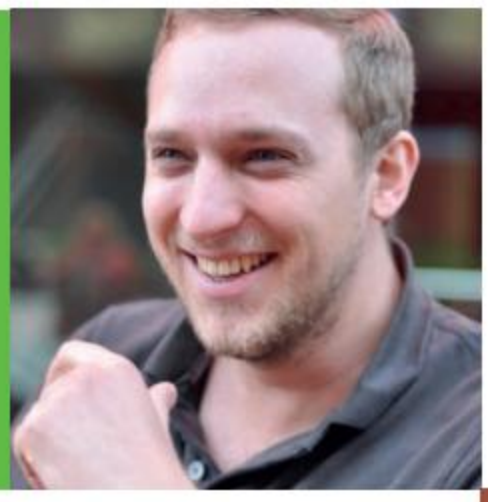
to get more. "It's a snowball effect," explains James. "Ground Shatter only really came into being as a result of getting Creative England GamesLab funding for *SkyScrappers*, and that in turn has led to further opportunities down the line.

"Now I've had a second, larger amount of funding from Creative England for our new project, which will hopefully open other doors and continue to ensure the future of the company." Slug Disco's John Connor agrees. "What we have found is that when things start moving it becomes easier. The UK Games Fund was the first moment for us, followed by a successful Kickstarter and Work for Hire. It all adds up.

"Initial funding can also open the door to publisher partnerships. Not only will this help financially, but publishers can help with red tape, marketing, PR and all sorts of other gubbins that will allow you to focus on actually making your game.

"We decided that we wanted to work with a publisher for our first title," says Cardboard Sword's Olly Bennett. "For the benefit of their expertise and existing marketing structure and fanbase. We also prefered the idea of working towards a revenue share deal, because that would prove that our partner had faith in our title and would work with us to make it a success, rather than just adding a new entry into their profit and loss and writing off some corporation tax.

> **We're devs, not financial experts, and some of these schemes can be intimidating or cause big problems.**
> *Olly Bennet, Cardboard Sword*



"There really does seem to be a prevailing change in attitude towards indie devs these days. Publishers don't seem as forcefully controlling as they were known to be in the past. Deals are more reasonable for all parties, and competition feels healthy."

Ghost Town Games' Phil Duncan points out that a publishing deal should be mutually beneficial to everyone involved. "Like a lot of developers we were keen to find a partner who could help with areas of the development we were least experienced in (namely marketing, PR and QA).

"We met with a lot of different publishers to show them the game and hear how they thought they could help. Some publishers we turned down either because we didn't like the deal, or we thought they perhaps had too many titles on their books to give ours the attention we wanted."

"[Finding a publisher] is easier than it has been for a long while," says Playtonic's Gavin Price. "There are quite a few new and established digital-focused publishers doing very well these days and in many ways they are redefining what the word publisher can mean. We know this first hand having developed a strong friendship with Team 17 as much as a professional relationship."

> **One of the great things about the indie scene is that there's a lot of open communication between developers.**
> *Phil Duncan, Ghost Town Games*

The alternative to a publisher partnership is obviously self-publishing, and while this will give you maximum freedom as you develop your game, many of the devs interviewed here had less-than pleasant things to say about it.

"Self-publishing is a lot of non-dev work and unless you've someone on the team very good and focused (and preferably very experienced) at the bizdev, marketing and pr side of things, it can really stop you doing what you love and care about most," says Price. "The right publisher and deal can be very bespoke and tailored for you to maximise the opportunity. I can only guess what the advantages of self-publishing might be and that'd be getting to understand more about the entire process of releasing your game first-hand and understand what it takes. I'd imagine only a lucky few actually self-publish a game and then want to self-publish again afterwards..." ■

CREATIVE ENGLAND

Among the many funding opportunities available, Creative England is a relatively recent option and one that is becoming very popular among indie developers. Newly appointed head of games and digital at Creative England, Rob Crossley, says that the initiative is still in its early days but that he has big plans.

"Right now what we offer is investment, up to £250,000, and that is split into three different options," he says. "Business loans, revenue-share investments, and less occasionally, equity investment. I feel it's worth mentioning that very recently we softened the terms of our revenue share policy because I want us to support developers and present them with the best value we can.

> **There's a lot to say about presentation. Be clear, be concise, and most importantly be honest.**
> *Rob Crossley, Creative England*

"We also run grant funding via programmes such as GamesLab Leeds, which we launched on November 24. Developers in the Leeds City Region can secure up to £30,000 in grant funding, as well as one-on-one mentoring. Developers can apply on our website, and we're really interested in seeing all kinds of proposals from all kinds of companies."

This one-on-one mentoring is indicative of where Creative England is headed in terms of non-financial aid for developers. But that's just barely even scratching the surface of their plans for the future.

"What I'm working on now in the background is publishing partnerships. The idea is we'll put in half of a game's budget, with the publisher putting in the other half. Creative England doesn't want to just invest in games, we want to give developers a route to market. I want to offer an end-to-end solution.

"In terms of how this benefits publishers, quite simply we're de-risking their investment, we're doubling up on their due diligence, and we're exposing them to more opportunities. It's proving to be a popular concept among publishers I'm speaking with."

So far Creative England has funded many independent developers in the UK – some of whom are even featured on these very pages – and they have no intention of slowing down.

"We've funded more than £3 million in games projects so far," Crossley says. "Some of these have developed into fantastic commercial products, such as *Warhammer Freeblade*. A game developed by a fantastic midlands studio Pixel Toys, part funded by us, which went on to be shown on stage at last year's Apple iPhone 6S press conference. That journey is what we want to be all about. Discovering games from brilliant minds dotted across England and linking them to the biggest audience and partners possible.

"We link developers together at industry events and connect small companies to multinational corporations. We took 3 developers to EGX in September and are looking for 4 Leeds-based companies to take out to GDC next year. I'm really excited about our future in this space too, with co-publishing our promotion and marketing will be enhanced dramatically."

So what should developers keep in mind when pitching to Creative England? "There's a lot to say about presentation. Be clear, be concise, and most importantly be honest. If you can smell a lie in a pitch meeting then that's generally bad news. Sometimes the most reassuring answers I get are 'I don't know' - that at least builds trust. Also, a video demo really helps, and demo code is even better."

Also, make sure you know your numbers. "If you don't have data on sales projections or company revenue that's somewhat undesirable, but certainly it's worse to pull those numbers out from thin air or bravado. We are duty-bound to scrutinise numbers, so if you're claiming your free-to-play game will yield average revenue of £40+ per paying user, it's going to be quite an endeavour to pass scrutiny."

Passionate developers who really want to be successful are more likely to catch the eye of Creative England, especially if they have a unique, attention-grabbing project that isn't just another clone of the latest popular shooty bang.

Ultimately though, "nothing is impossible. That's the most important thing. If you have a proposal get in touch." ■

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A HIRE PURPOSE?

Picking your next employee is almost as important to as committing to your next game concept. Developers large and small share their insights into hiring the right people for the right jobs

Game studios, quite rightly, are recognised for the games that they build, but they are equally defined by the people that make up the team.

Take away a game project, and a studio can live on. Remove all the staff, and a developer is just an empty building.

People, then, are the number one commodity for your next project. That, makes hiring just about the most important thing any studio does beyond actually crafting games.

But most game developers aren't passionate about the logistics of hiring. Most come to this industry because they love making games. Compared to tasks like writing narratives and designing levels, drafting a job description is hardly appealing. Getting that process right, however, is almost as important as turning up to work in the morning.

Understanding every nuance of game development recruitment from the hiring side ultimately takes years of experience securing talent. But the learning never stops, so it helps to lend an ear to other studios. Studios like Sports Interactive, renowned for the *Football Manager* series.

Here the team works in annual cycles around their flagship IP. That approach allows the team to look at recruitment on a yearly basis, and welcome new talent in a rather orderly fashion. It's an approach particularly suited to larger teams, but according to the studio's director, the method should never come at the expense of ad hoc hiring.

"It's normal for us to have a couple of open positions at any one time – it's harder recruiting for certain disciplines than others," says Miles Jacobson. "But we tend to only hire for what we need, and try and give those people careers – I'm very proud that more than a third of our team have been here for more than a decade. But that doesn't mean we're closed to new talent joining. Quite the opposite.

"We tend to avoid contractors, in the same way that we try and avoid middleware. We prefer to roll our own, and have the knowledge to any secret sauce in the studio."

Already, Jacobson has highlighted an important point; the common distinction between 'job' and 'career'. Most of those pursuing work in the games industry are not just looking to pay the bills. They come to the industry with a passion that they want to fuel a career, and there's a lot of vacant positions to choose between. That means securing the best talent for your game project comes down not just to what they bring to the table, but what you offer them. Show prospective employees that the job on the table is about much more than current salary and responsibility, and you'll likely attract applicants that will bring a great deal extra to the position.

> **Every single person I meet, I'm subconsciously measuring up for potential roles.**
> *Andrew Smith, Spilt Milk*

INSIDE JOBS

Recruitment in an increasingly complex sector also presents studios looking to hire up with another consideration. Broad, varied recruitment strategies can reach higher numbers of a wider array of job seekers. But equally, an elegant, simple approach can keep things sharply focused; something especially useful in a world of specialists, and small teams with limited resources.

There are so many options either way you go, with agencies, HR experts, online resources, word-of-mouth and good old fashioned networking each providing a robust route to welcoming future colleagues. Choosing the best strategy for your studio comes down to resources you already have and roles you may be hiring for.

Over at long-standing UK studio and current VR specialist nDreams, the team have found that keeping their options open reaps many rewards in spite of – or perhaps because of – the effort needed.

"nDreams has a very broad recruitment strategy and a mix of approaches to sourcing for our roles," explains Tamsin O'Luanaigh, the outfit's HR manager. "These include advertising for specific roles and ongoing advertising for roles we know are hard to source. We use a mixture of direct advertising and agency sourcing for both permanent and contract roles, and we always welcome speculative applicants as we are keen to build a pipeline of talent who we can contact when opportunities become available."

That broad method, O'Luanaigh reveals, has largely been established and refined in the last year. And according to her colleague and nDreams VP of development Tom Gillo, it has brought many advantages, without sacrificing the importance of employing for careers over jobs.

"Using a variety of resource pools allows us to be more flexible as our projects determine the size and scale of the resources we need," he states. "It's also important to recognise the value of having a core pool of talented and passionate individuals in-house who can offer the extra resources as and when they are needed."

Development of nDreams' first VR title, The Assembly

HIRED GUNS

Sometimes building an internal HR resource while partnering with agencies and following various other routes is simply too costly, or too much effort if expansion plans are modest or temporary.

Spilt Milk is a team of two. Managing director Andrew Smith and technical director Andrew Roper are currently busy polishing *Lazarus*, an ambitious blend of shmup, MMO and roguelike. That doesn't leave them too much time to devote to recruitment, but the team is convinced by the power of harnessing external contributors as their development demands change.

"We are always on the look out for talent," says Smith. "It's accurate to say that every single person I meet, I'm subconsciously measuring up for potential roles – but that's not because I'm a vulture; more that you never know when an opportunity might happen and you've got to move quickly. Also, I'll always remember a far smarter person than me saying that you need to hire for the people, not the roles. That's often a luxury small indies don't have but, basically, if you find someone amazing who fits the team, you just have to try to find a way to bring them on."

When it comes down to hiring, Spilt Milk keeps it simple. It prefers to meet applicants in-person, and it finds that the temporary contractor suits their needs best, while giving the duo a chance to see if a new collaborator might even become a permanent hire.

"Some people want that, some people don't. In the end, that decision comes down more to their attitude and the way they work in the company's culture," Smith muses. "Even with just two permanent staff, we still have a culture of sorts, driven by the personalities of the people involved. Sometimes you find an amazingly talented person who just doesn't fit."

Over at Chucklefish, the mid-sized indie outfit behind sci-fi sandbox adventure *Starbound*, the team see many benefits in keeping recruitment straightforward. While business manager Donna Orlowski plays down any notion that the team has a particular recruitment strategy, the studio is a growing one, with a good idea of what they need to thrive.

> **Our third interview is essentially me trying to work out whether or not they are an axe murderer.**
> *Miles Jacobson, Sports Interactive*

"As we recently started working on a number of new games we have locked down recruitment as we have enough staff to deliver these projects," Orlowski says. "However the aim is to always stay open minded and take an opportunity when it's presented to us. For example, we've permanently hired a number of people who used to be *Starbound* contributors or contractors – they've proven to be invaluable team members, so we could not let them go. This is why we never say never."

In other words, for a smaller outfit that knows their game, their studio culture and their needs, sometimes an ad hoc approach to hiring is best.

CULTURE CLUB

On the matter of studio culture, there is perhaps nothing more important than finding a hire not only with the right experience and attitude, but who will equally gel with your team. A studio is powered by the interactions between its team members, which means finding that cultural fit will see employee and employer get the most from a hire.

"With people working together for so long, we try and find people who are going to fit into our team on a personal level. That's very important," offers Sports Interactive's Jacobson. "Our third interview is very informal, and is essentially me trying to work out whether or not the candidate is an axe murderer. Although someone did once answer 'yes' to that and still got the job – but they are a LARPer."

It's a point playfully made, but it's an important one. And it matters whether your studio is micro-sized or vast, most agree.

Moreover, studio culture is in part a responsibility. The games industry's struggle with diversity and equality is well documented and, while things are getting better, there is a long way to go. Much of the responsibility of engendering cultural diversity can fall on the shoulders of staff already tackling recruitment as a secondary function to their core role. From one perspective, that presents a significant challenge to bettering diversity.

"Studios have to do more than just hope for more diverse CV's to appear," asserts David Smith, MD of recruiter Interactive Selection, and founder of the UK's Women In Games and BAME in Games non-profit networks. "Struggling studios will remain struggling until they take additional action to make the studio appear more welcoming. Games compete with tech and internet companies for much of the very best talent."

So what can those developers really do? Fortunately, Smith has an answer.

"There is no silver bullet," he posits. "More diverse applications for jobs will only come when a job and a studio looks to be more appealing. This means friendlier HR policies – e.g. no crunch, more dignity at work– and the visibility of role models. This means more awareness of unconscious bias and looking for the best person with potential, not just a person that can hit the ground running."

Recruitment is an expertise built from a dizzying variety of undersized components. There is no one right or wrong way to find talent. Much of it will come down to gut instinct, and the real instinct in finding a fit for your team is one we use everyday; our ability to interact with other people.

From that perspective, we have each had a lifetime of recruitment training we can take to our next hire. ■

TIPS FOR TALENT

Experts from all across the game development landscape share essential advice on securing the right staff

"Look very closely at your needs both short term and long term. Try to build a team – there's no point having too many AI coders and not enough UI coders, and different people have different skills and interests. Most importantly though, only hire people who are cleverer than you are."

Miles Jacobson, Studio Director, Sports Interactive

"The world is shrinking with technology, and it is easier to discover both active and passive talent. Securing the brightest talent remains the challenge. Many job seekers still have choice and are asking more questions about hiring studios before committing to a company. It will be the studios thinking about the needs of staff and doing much more than simply advertising a job opportunity that will win out."

David Smith, MD, Interactive Selection
Founder, Women In Games and BAME in Games networks

"Finding people with experience – in your tools and the genre of the game you're making – is everything. We know what we're up to, and we all have multiple roles to fill, so any time spent handholding or catching someone up is time better spent elsewhere."

Andrew Roper, Technical Director, Spilt Milk

"Being open to hiring from outside the usual job spec should be part of the broader strategy. In every project there is the opportunity to make room for people with diverse perspectives to contribute. Bringing someone into your team who may not fit on paper but who undeniably knows their craft not only adds new skills to the team, but has the potential to greatly affect the path of development."

Rosie Ball, Producer, Chucklefish

"The staff within your own studio are your best resource for new hires. Their collective network is hugely valuable and there is nothing better than the personal recommendations from people who have worked together in other companies previously."

Tom Gillo, VP of Development, nDreams

RECRUITING THE FUTURE

How does – or doesn't – new technology like augmented and virtual reality impact hiring practice?

The only thing that doesn't shift within the games industry is the constant change. New trends and tech mean studios are founded on a landscape in eternal flux.

As such, change is something developers should be used to. But with the arrival of technologies such as virtual reality and augmented reality – and thanks to the new emphasis they place on pan-discipline learning – it would be easy to assume recruiting may be evolving into a more complicated business.

Yet there's a case to argue that such technological diversification only makes recruiting a more fluid process.

"Honestly, it means it's a bit easier," offers Spilt Milk technical director Andrew Roper on the impact of those not working with the likes of VR and AR. "We're concentrating on making 'traditional' games with a core audience in mind, so while it narrows the talent pool, it also focuses it."

"There are some people who want to work in those fields and if you aren't in them, they won't be interested," says Sports Interactive studio director Miles Jacobson. "The hiring drive from those with funding who are in those fields means there are fewer people around, but also that there will be lots of people with that experience available in a couple of years, as not everyone there is going to succeed."

Change, it seems, can help the game development hiring process as much as it complicates things. ■

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GRADUATING TO GAMES

For graduates, the path into the games industry is a winding one. **Jem Alexander** seeks advice for students eager to find their fortune developing video games.

Supermassive is currently on a hiring spree, looking for students across all disciplines

Today's students are the game developers of tomorrow, but it's getting harder for young people to enter the industry. A shortage of entry-level jobs means that the growing number studying games-related degrees are having a difficult time finding work when they leave education. So how can graduates make sure they stand out from the crowd?

Liz Prince, business manager at games recruitment agency Amiqus, says that "it's no secret that the games industry is over-subscribed with more games graduates than there are entry-level jobs. In our experience achieving the higher grades of a 2:1 or a first class degree makes landing that first job in the industry much more likely."

This sentiment is mirrored by Aardvark Swift, another games recruiter. "For technical grads who studied coding, first class degrees are usually essential," says managing director Ian Goodall.

It's not uncommon now for games studios to have partnerships with universities across the country. One such developer is Supermassive, which has had great success with hiring students in the past. "We spend quite a bit of time building relationships with institutions," says Steve Goss, executive producer for design and technology. "We try where we can to help them be the absolute best they can be, so that they are turning out people with great skills who understand the way the industry works."

You also need preparation for working in a real-life studio environment and some understanding of how your skills fit into a team. This is something universities are getting better at providing. "They're genuinely getting better," says operations director Jonathan Amor. "What we're looking for are people who are good problem solvers, they work well in a team and they've got a genuine idea of what they'd have to do if they joined a company like Supermassive. We're seeing more of that now, than we used to certainly."

Ian Goodall suggests students deeply research available courses. "Look at the backgrounds of the lecturers and course leaders. Many are led by really successful games industry pros who have chosen this path in favour of games creation. This is a good starting point in making your choice."

But why stop there? As Liz Prince says, "there's lots of detective work you can do! Have a detailed look at the course content and check out the quality of the portfolios of some of their grads. Have a look at the kind of studios you'd love to work for on LinkedIn and see where their employees went to Uni," Liz recommends.

> **Portfolios are lovely, but actually having converted your idea into something you can then hand to me is so valuable.**
>
> *Steve Goss, Supermassive*

For students who will be searching for their first jobs in the near future, the most common piece of advice seems to be simple. Be passionate about games, and don't be afraid to display that. If you're interested in a job in the industry, chances are you're already interested in playing games, but it's a true passion for the medium that will carry you into the games industry above other applicants.

"I generally look for people who are interested in games," Steve Goss says. "It's like being a chef who doesn't like food. I don't know how you can make something if you don't engage with it."

In fact, Jonathan Amor would argue that passion for games can be more important than a games-related degree, when it comes to programming roles. "I think the people who come through a computer science or maths degree, they've still got a great background and if they love games and they've taken initiative they've gone away and made things themselves, which is much more viable nowadays. You learn so much more from that. You stand out from the crowd, having done something."

The easy access to free games engines for students and hobbyists means that coming to an interview with something tangible to show your interviewer is easier now than ever. "For a number of disciplines that we hire for, having made a game or a piece of software is a requirement," says Steve Goss. "Portfolios are lovely, but actually having converted your idea into something that you can then hand to me and I can touch and we can talk about, is so valuable. Particularly for designers, I'd almost make that the rule. You've got to have a game.

"It doesn't matter if it's terrible. As long as you know it's not very good and I know it's not, then we can talk about it. Often that's the really critical thing. We had a guy come in to interview and he was so passionate. He showed his game and he said 'I've got to really apologise, it's awful beyond all belief'. And it was, but he'd put so much effort into it and he knew where it was and what it should be, that you could have a massively creative and constructive dialogue with him. And we hired him, I think on the spot, to be honest. Because it wasn't about success. It was about giving it a go and trying to make something. All we do every day is make things, and we need people who want to make things."

Thanks to the number of graduates, studios are able to pick and choose from a large pool in order to make their teams the best they can be. " We are quite fussy, actually," says Amor. "We are quite careful to hire people we genuinely believe are great people, great team fit. One wrong person can completely upset the balance. That counts negatively a lot more than not hiring anybody, often. So hiring the right person is massively important."

But don't feel disheartened by the fact that there are so many people after the same jobs. There are plenty of ways into the industry that you perhaps haven't considered.

"I don't think people realise how many different roles there are in the industry," Amor says. "There are so many roles, even beyond development. Marketing, sales, writing..."

"And massive specialism, as well," Steve Goss adds. "We have people who do just lighting. They *just* light. That's all they do because it's so skilled and specialist. The depth of knowledge you need and the amount of work required to light a game is so massive. Say you want to be an animator. Is that someone who works with motion capture data? Is it someone who does hand animated data? Can you do humans? Do you want to do creatures? Do you understand how horses move? Oh my god, there's this massive world."

Ultimately, however, it's up to you to make yourself stand out to prospective employers by going the extra mile.

"People need to realise that they need to do something that really stands out from the crowd," Amor concludes. "It's really hard to stand out these days. It takes a lot of work. People can go on a great course and do really well at it, but unless they've done a bit extra they won't stand out, because there's thousands of others who've done the same thing."

"You will fail," says Goss. "And that's good. Then you'll succeed, and that's even better. And as long as you can keep doing that and not be put off by falling over, that's the kind of person we need." ■

Pictures (Top to Bottom): Jonathon Amor, Ian Goodall and Steve Goss

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YOUR MONTHLY GUIDE TO THE BEST CAREER OPPORTUNITIES

MOVERS & SHAKERS
High profile gains and losses at Rovio and 343 Industries
P32

RECUITER HOT SEAT
What does it take to get a job at Creative Assembly?
P33

DIVERSITY
Ubisoft Reflections argues that a diverse workforce makes diverse games
P35

WELCOME TO THE JUNGLE

Recruitments specialists Aardvark Swift, Amiqus and OPM tells **Marie Dealessandri** about the large scope of jobs available in the games industry that can attract talents from outside the sector

The games industry's jobs sector is sometimes thought of only as studios looking for talented developers, but there's actually a huge breadth of jobs available in the sector. Some of which might even attract people from outside the industry.

"We do come across people that have come from outside of the industry, though making this transfer isn't easy," Nathan Adcock, PR and marketing manager at OPM Recruitment, tells Develop. "Video games is a unique industry that requires niche skillsets and desired experiences. Most of our clients ask that applicants have experience working in the games industry for their vacancies. Having said that, there are some roles where it is easier to get a foot in the door."

Illustrators, concept artists, composers, musicians... These are some of the lesser-known professions in the games industry that are attracting people from 'the outside world'. But they are still not necessarily the best way to enter the industry.

"QA is a big gateway area where people are attracted to testing great game experiences rather than business applications," Liz Prince, head of games recruitment specialist Amiqus, says. "We regularly see composers and musicians who want to work on games audio scores. Analytics and UX are another two evolving areas using transferrable skills available outside the industry. These people often look to hone their skills in a highly visible, commercial environment which games can provide in a different way to traditional sales, marketing or design."

Ian Goodall, founder and MD at Aardvark Swift, agrees that data analysis and UI/UX are 'great opportunities' to enter games.

"The games industry needs these people and there are very few within the sector. Same can be said for digital marketers and social media marketing experts," he adds.

> **We regularly see composers and musicians who want to work on games**
> *Liz Prince, Amiqus*

"While some candidates can be new to the industry entirely, others come from neighbouring industries such as TV, film, gambling, toys and licensing. So candidates often possess skills and knowledge which are transferable to the games industry."

Adcock suggests that transferable skills should be highlighted at the top of a candidate's CV. "This is where you need to grab the hiring manager's attention," he says. "However, some people making the crossover should be prepared to take a pay cut, particularly software engineers and creative people coming from a film or TV background."

Showing your passion for games, being committed, familiarising yourself with the games industry: these are the keys to enter the games sector, according to both Prince and Goodall. ■

MOVERS AND SHAKERS

The latest high-profile hires and promotions

ROVIO

Former A Thinking Ape's product lead WILL LUTON has joined Rovio Stockholm Studio as senior product manager.

Before A Thinking Ape, Luton worked for the likes TinyCo, Mobile Pie and Sega.

At Rovio, Luton will be responsible for leading product management on Angry Birds 2.

He commented: "It's a really exciting time to join Rovio as they continue to gain traction with F2P products. For me Angry Birds is mobile gaming royalty – you'd be hard pushed to find such recognition and fandom anywhere else."

Head of Studio REGINALDO VALADARES added: "We are very excited to have an industry heavyweight like Will joining our team. His expertise in free-to-play will be highly valuable and I wish Will a very warm welcome to Rovio."

343 INDUSTRIES

Studio head of internal development JOSH HOLMES has announced his departure from Halo developer 343 Industries to "pursue independent game development," he said in a statement. He is being replaced by head of production on Halo 4 and Halo 5: Guardians CHRIS LEE.

The latter stated: "As a long-time Halo fan, it is a tremendous honor to now lead such an amazing FPS development team. Josh has been a great friend and leader during the last 7+ years, and we wish him all the best in his indie efforts.

"I am excited to continue shaping the future of this legendary franchise alongside our FPS team and the community that I love."

Head of 343 BONNIE ROSS said: "Josh has been an instrumental leader for the Halo franchise, helping to build 343 Industries, and delivering multiple AAA games, as well as the ground-breaking sustain efforts for Halo 5: Guardians."

NEWBAY

Develop's sister title MCV has hired KATHARINE BYRNE as news editor.

She joins from Expert Reviews where she has been reviews editor for the past year and was working alongside SETH BARTON, now MCV's editor.

Byrne has also worked for the likes of Nintendojo, Official Nintendo Magazine, Nintendo Life, GamesMaster, Official Xbox Magazine and Nintendo Gamer.

Barton said: "I'm excited to be working with Katharine again, her extensive experience will be invaluable in the rebooting of MCV."

PRODUCER OF THE MONTH

This month, we catch up with Dave Cox, producer at Mercury Steam

Tell us about you career to date?

I started in games retail back in the late eighties. I knew I wanted to work in the games industry but struggled to break into the industry. I sent my CV to many companies over the years and was lucky to finally get a role at Konami in 1997. This was a great time for the company as they were developing games for the PlayStation which would become iconic. I was very lucky. My role was product manager but I ended up working with the development teams in Japan on helping to bring their games to Europe. I worked with Kojima's team on *Metal Gear Solid*, Team Silent on *Silent Hill* and a little game called *Goal Storm* that ended up being PES. One of the first games I worked on was *Castlevania Symphony of the Night*, which in hindsight proved fateful.

I moved into production a decade later and ended up taking over the European development team and producing several award winning games, including *Castlevania: Lords of Shadow* with developer MercurySteam, which went on to become a multimillion selling franchise.

I left Konami in 2014 and joined a small development studio in Leamington but it wasn't a good fit for me and when my old team mates at MercurySteam asked me to join them for their new project I jumped at the chance!

What are the biggest challenges you're facing on your current project?

Getting noticed. Being our first independently published game it's difficult getting the game noticed. Dealing with platform holders and various stakeholders is probably the hardest part of my current role. Keeping to schedules without a publisher on your back is also difficult. We have to be disciplined to make sure we are hitting our dates and delivering the quality we want.

What's the best advice you've ever been given?

I learned that surrounding yourself with talented individuals and working collaboratively is the key to success. Building relationships based on trust takes time and means you have to honour your commitments. When everyone is working in harmony for the common cause, you can do amazing things together. It's like playing a piano – if one of the keys is out of tune, it doesn't matter how good you play, it will sound awful.

What advice would you give to someone looking to forge a career as a producer?

You need to be good with people. Be friendly and approachable at all times and keep any ego locked away. We are in the fun business – never forget that! ■

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RECRUITER **HOT** SEAT

Creative Assembly's talent manager Emma Smith, recruitment coordinator Joanna Green and recruitment resourcer Luke Johnson tell **Develop** what it's like to work for the Total War devs

CURRENTLY HIRING

Company: Creative Assembly
Location: Horsham (UK)
Hiring: Around thirty open vacancies across a few projects. Current open roles include opportunities in audio, VFX and animation, level designers and experienced developers in general.
Where to apply: www.creative-assembly.com/jobs

What differentiates your studio from other developers?

Emma Smith: Here at Creative Assembly we have a rich and well-established heritage and we take great pride in celebrating the work developed by our award-winning team. We are proud to be part of the SEGA group, we have their full support and have also achieved a balance that ensures we maintain both creative and operational independence.
We are dedicated to nurturing our world-class team and have good routes for trainee development. We encourage a collaborative approach to recruitment from across the business to ensure the whole team is on the lookout for new talent who might make a good fit for the studio.

Luke Johnson: Alongside the renowned *Total War* franchise, which continues to amass awards, and the critically-acclaimed *Alien: Isolation*, we are thrilled to be working with Microsoft and 343 Industries on *Halo Wars 2*. The fact that our studio is home to such successful titles and works with prestigious partners, makes it a very exciting place to be – but also a stable place to be with a clear role for us within the industry.

Joanna Green: We have a passion for education and work with our team to deliver a programme of educational outreach, detailing the wide variety of career opportunities which exist in the industry and supplying speakers who provide insights into the more specialist aspects of our business.
We have carried out a wide range of educational activities including motion capture 'experience' days and mini game jams for schools, as well as collaborating with some of the Coder Dojos in Horsham and Brighton. By getting involved at the early stages of education, we can inspire children and young adults to recognise their creative potential and ability to innovate, using computer games as a medium.

What advice would you give for a successful interview at your studio?

ES: Make sure that your CV and skill set clearly match the job description. What makes a real difference is a demonstration of how the candidate has passion for their craft and strives tirelessly to ensure quality throughout their work.

> **We are dedicated to nurturing our world-class team.**
> *Emma Smith*

LJ: We always admire candidates who are able to learn from the feedback that is given during the recruitment process, put this into practice and then contact us at a later date to discuss another opportunity, having demonstrated a step-change in their approach.

What perks are available to people working at your studio?

LJ: Creative Assembly is home to state-of-the-art facilities, with our own mo-cap studio and in-house audio facilities. We offer a robust training package, including leadership bootcamps and prestigious creative workshops with world-renowned experts to inspire and develop our team. We also offer a whole host of other benefits, including our extremely popular 'Ice Cream Wednesdays' and on-site sports massage.

Do you recruit internationally?

JG: Our search for new talent extends far beyond the UK – we take pride in the fact that our growing team is diverse, multi-cultural and multi-national. We don't limit ourselves to geographical boundaries. We can include support for visa processes, relocation packages and wider support such as what the local community is like, transport links, setting up bank accounts, accommodation and more.

How have your recruitment needs changed at the studio?

ES: The recruitment function here has undergone a lot of positive change over recent months and we are pleased to be taking a fresh look at our processes to ensure recruitment is even stronger in the future. With a team of well over 400 employees, which is still growing to meet the demands of our portfolio, our recruiting methods need to be agile to ensure our team remains at the top of its game.

Why should developers join your studio instead of going indie?

ES: Creative Assembly offers the stability of a well-established studio, with a long-standing award-winning portfolio, supported by SEGA's stature, whilst retaining a great deal of independence. There are ample opportunities to be creative and innovative, while still seeing on a daily basis the direct impact of their work on world-renowned games. ■

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GET THAT JOB

This month: UI artist with Auroch Digital's **Chris Raadjes**

What is your job role?
I'm a UI designer and artist at Auroch Digital. My primary responsibility is to create intuitive interfaces that are also beautiful to look at. In practice, this requires a lot of experimentation, iteration, and patience.

What qualifications and experience do you need?
A strong artistic background will be essential. Every project will challenge your graphic design skills, but at times you'll be expected to draw, paint or work in 3D as well. You'll also need a strong interest in how people engage with different types of technology and media. As consumers, we can instantly tell when an interface works, so developing this feeling into a conscious understanding by asking *why* it works is vital. Finally, you need to have good communication and people skills. You'll need everybody's help to create great interfaces and that means being able to articulate your ideas clearly to any audience.

How can people get a job in UI?
In the past, UI design and art was one of many hats you were expected to wear in your career as an artist. While this is still the case for many smaller studios, larger studios now use dedicated designers and artists for these roles, which has resulted in more entry level positions being advertised.

What do you look for in interviews?
Interface designers and artists should be able to demonstrate their value by explaining the problems their designs solve. They should also keep in mind that the day-to-day reality of interface design is that the finished product is a compromise between many different goals and technical constraints.

By showing multiple variations on the same design and explaining the benefits and tradeoffs with each approach, you demonstrate that you can think critically about your work and its relation to the project as a whole, which is crucial for our field.

> **Designers will be defining the gold standard of interaction for an entirely new medium.**
> *Chris Raadjes*

What opportunities are there for career progression?
If you develop your proficiency in both interaction and graphic design, you'll be able to anticipate problems and come up with novel ways of solving them. This naturally leads towards more senior positions, as your skills can be used to guide the project, consulting with the team on these elements from its inception.

Your skills are also highly transferable. Once you understand the basics, you can apply them to web or app design as needed. Since many industries are pivoting towards software, there's a huge demand for designers to solve new problems.

Why choose to a career in UI?
It's an exciting time to work in UI. There are new opportunities on the horizon: emerging tech such as AR and VR are being driven in large part by our industry, and designers will be defining the gold standard of interaction for an entirely new medium. That's a challenge that doesn't come around too often, so get involved! ■

SKILLS AND TRAINING

This month: Senior lecturer in computer games design Peter Howell discusses the University of Portsmouth's syllabus

Overview: The University of Portsmouth's School of Creative Technologies offers BSc (Hons) courses in Computer Games Technology and Computer Games Enterprise
Address: School of Creative Technologies, Eldon Building, Winston Churchill Avenue Portsmouth, Hampshire PO1 2DJ
T: 023 9284 5460
E: ct-enquiry@port.ac.uk
W: www.port.ac.uk

The University of Portsmouth provides a wide range of possibilities for creative minds. As far as games are concerned, its School of Creative Technologies offers BSc courses in computer games technology and computer games enterprise.

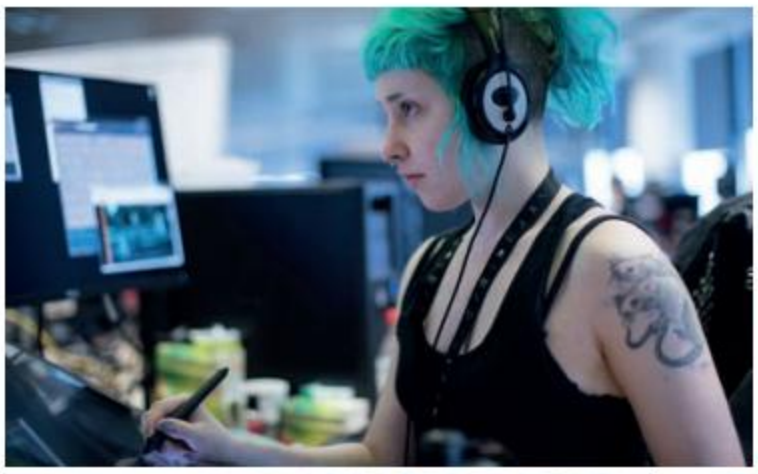
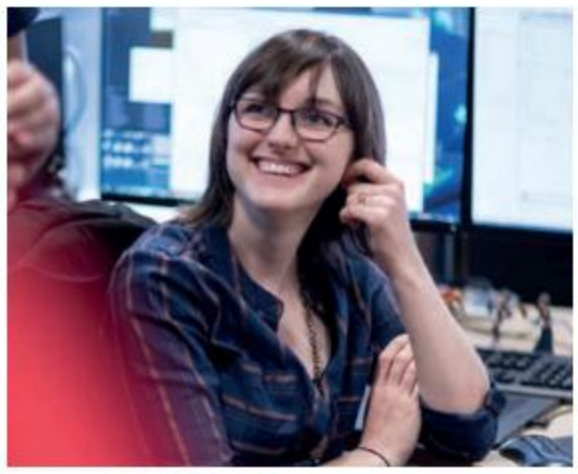
"We also offer both of these courses with a 'business communication' option, allowing students who do not speak English as a first language to improve their communication and language skills alongside their chosen course," explains senior lecturer in computer games design Peter Howell. Howell is a former designer and scripter at The Chinese Room.

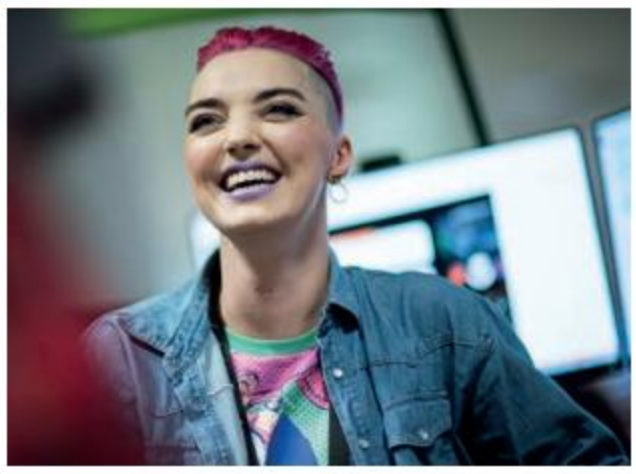
The school's link with the UK games industry is actually one of the strengths of the programme, he adds: "We regularly welcome speakers and sponsorship from Climax Studios, which is just down the road from the University, as well as from Stainless Games on the Isle of Wight. We have two visiting professors, Ernest Adams (DesignersNotebook.com) and Dan Pinchbeck (The Chinese Room), who offer a number of talks and workshops during the year for our students, focusing on a range of developmental and theoretical topics.

"Our staff maintains strong industry links with local, national, and international members of the industry. All students also have an opportunity to undertake a self-employed placement year, where teams set up and run their own game development studios for a year and work towards releasing a commercial product."

Students at the University of Portsmouth have access to the latest hardware and software for games development: console dev kits, Unreal 4, Unity, Articy:Draft, GameMaker Studio and even a virtual reality teaching lab.

"Our courses have an established track record of producing graduates that find employment in the games industry or other related creative industries, with over half of our students finding such employment," Howell concludes. ■



UBISOFT REFLECTIONS:

"HAVING A MORE DIVERSE WORKFORCE WILL PRODUCE MORE DIVERSITY IN OUR GAMES"

Marie Dealessandri talks to Ubisoft Reflections' talent acquisition manager Craig Pearn about what it takes to join the studio, why Newscastle is the place to be and diversity in the workplace

2016 has been an exciting year for Ubisoft Reflections – the Newcastle-based studio has supported the production of *Tom Clancy's The Division*, created its first expansion, *Underground*, took part in *Watch Dogs 2*'s development and crafted indie hit *Grow Up*.

2017 should be just as hectic, starting with the release of *Ghost Recon Wildlands* in March.

"Reflections has a great history and long legacy of developing video games that have been recognised for their creativity and technical innovation," talent acquisition manager Craig Pearn tells Develop. "What makes us different is the variety of projects we are working on and the freedom we have to continue innovating."

To achieve this variety, the studio is looking to expand its 200+ team.

"Right now we're looking to attract more than 20 profiles that cover all aspects of game development," Pearn says. "We're an ambitious studio with a bright future and we want pioneering, obsessive people to join us on our exciting journey. I'm always interested in talking with talented developers, so even if we aren't advertising a role that matches your skills, don't hesitate to get in touch. We'll soon be starting a graduate recruitment campaign for 2017 too, so if you're an aspiring game developer, watch this space."

BEING OBSESSED

For aspiring devs who are tempted by the Ubisoft Reflections experience, Pearn has some simple advice: "Make your CV stand out from the crowd."

He details: "For me, this doesn't mean a cool design or quirky pictures. I'm much more excited by the attention they have given to the job description and the research into Reflections and Ubisoft.

> **We like to see people obsess about their passion.**
> *Craig Pearn*

If your experience matches the job description, tell me about it in your CV. If your skills match the job description, use your CV to tell me when you've used them. I still want to know everything else, but make sure the relevant information stands out first."

Being up to date with what's happening at Reflections is definitely a helpful factor in landing your dream job at Ubisoft's studio, Pearn says.

"We had a candidate fly in from the USA for an interview and he came super prepared. Brought examples of his work that were presented well and on point, and demonstrated his passion for game development. We want people to be themselves, to show us their human side; we like to see people obsess about their passion and their craft, and we like to see them take risks and want to create something original."

When asked about what candidates shouldn't do, Pearn has another very simple answer: "Make sure you're on time."

KING IN THE NORTH EAST

"Many candidates are surprised by our studio location in Newcastle, and in the North East in general," Pearn says. "It's a great region of the UK, with a host of cultural hubs and great nightlife, and it's sandwiched between amazing countryside and a beautiful coastline. We recommend that interviewees and new starters explore the North East as there is so much to see and do. I think what surprises people the most is how friendly the people are in the city. This has been mentioned by so many of our new hires who have relocated here."

For a studio comprising over 20 nationalities, relocating employees to Newcastle isn't a problem.

"We've become adept at helping employees and their families move to Newcastle, facilitating all the important details like travel, accommodation, visa sponsorship and adjusting to the new environment," Pearn adds.

"It's about who is the best candidate, not where they are from. Having a more diverse workforce will produce more diversity in the games we make, reaching out to a wider audience." ■

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JIM HENSON
The house that Kermit built shows off its own internal game engine
P44

GIVE A HOOT
A chat with Jo-Remi Madsen about his game Owlboy and its nine year gestation
P46

POST-MORTEM
Techland's Tymon Smektala discusses the development of zombie kill-em-up Dying Light
P50

SETTING UP A STUDIO

All studios start out small, but only one became Supermassive. **Jem Alexander** investigates the developer's early days, how they compare to recently formed companies and what aspiring studio founders should know before they go about starting a business.

Getting a job in the games industry can be hard. It goes without saying that it's competitive and for some people, joining an established studio is a frustrating, limiting experience. For true creative freedom, the only option is to become the master of your own destiny. Make your own games. Set up a studio.

It's a daunting thought, but also a deeply alluring one. Who knows, you could be the next Bungie. Or the next Naughty Dog. It's fair to say that Supermassive hasn't yet reached such heady heights, but with the launch of *Until Dawn* last year, and two PlayStation VR launch titles under its belt, the studio has big plans as it looks towards a multiplatform future focused on both virtual reality and cinematic narrative experiences.

Managing director of Supermassive, Pete Samuels, appears almost wistful as he reminisces about the early days of the company. "I'd been at EA for seven years when I really started to think 'I want to do something different, I want to do something on my own'", he says. "I left EA with that plan in mind. It's quite hard with no reputation, and no large team, to do what I wanted to do. Which was eventually to make big and important games."

> **I wouldn't say 'luck', because I think you make you own, but it's spotting the opportunities when they come.**
> *Pete Samuels, Supermassive*

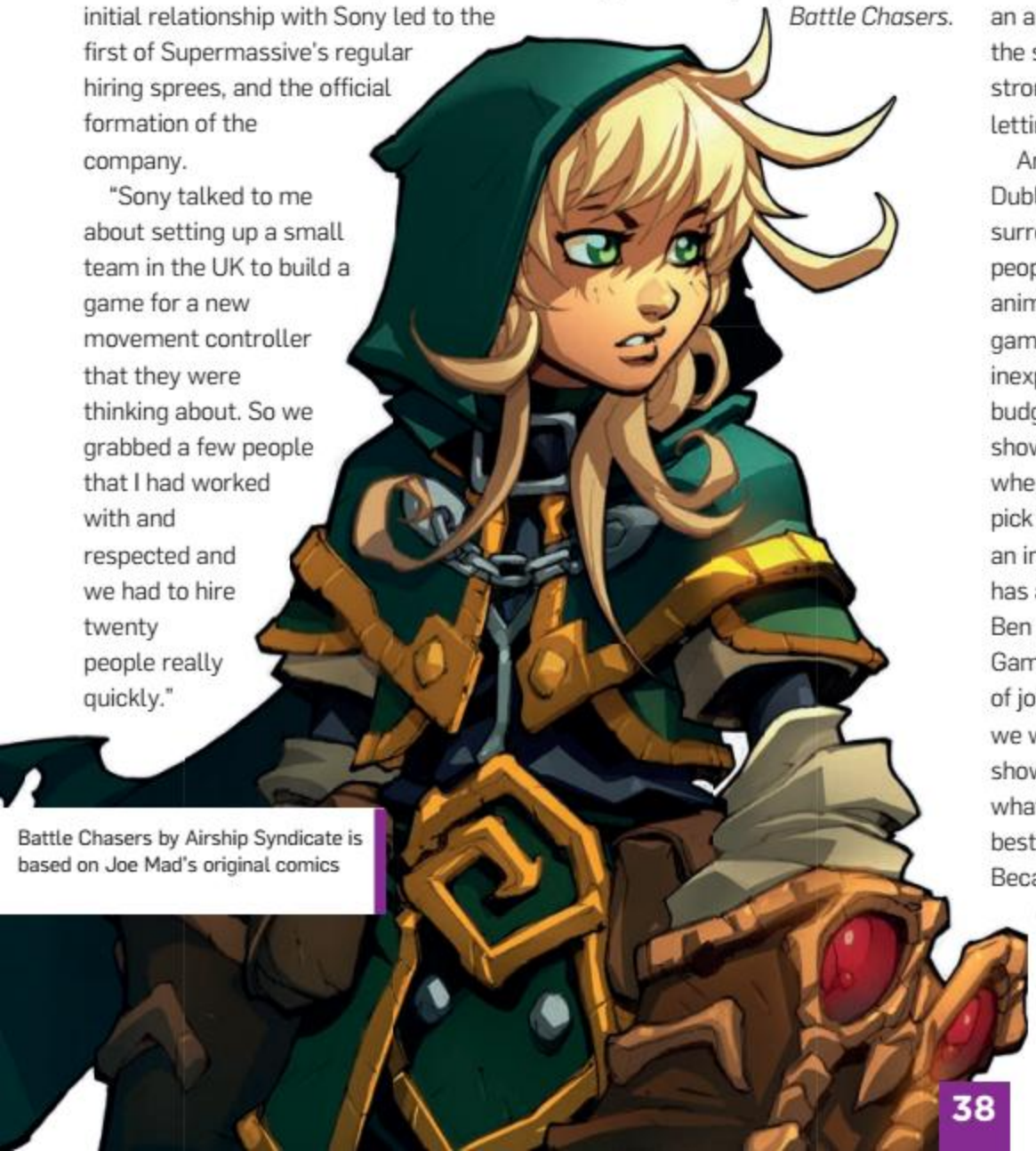
A lot of would-be studio heads have a similar mission in mind. To create games that have an impact, ignite passion and, sure why not, maybe make a bit of money too. So what's the difference between Supermassive and the many startups that don't make it beyond the first year or two?

"A lot of this is to do with opportunism. I wouldn't say 'luck', because I think you kind of make your own, but it's spotting the opportunities when they come." Being open to opportunities as they present themselves, and being flexible and nimble enough to take advantage of them, is a key skill when starting out. For Pete, the first big opportunity came in the unlikely form of the PlayStation Move motion controller.

Before any studio was founded, Pete and his brother Joe did consultancy work. "You can't always do exactly what you want initially when you start a business. You have to take the opportunities and grow it. We did some interim production management. Helped Sony out with a couple of projects. A little bit on *LittleBigPlanet* and a lot on *Killzone*," he explains. This initial relationship with Sony led to the first of Supermassive's regular hiring sprees, and the official formation of the company.

"Sony talked to me about setting up a small team in the UK to build a game for a new movement controller that they were thinking about. So we grabbed a few people that I had worked with and respected and we had to hire twenty people really quickly."

Going into business with a sibling is not uncommon, it seems. Elsewhere in the industry, Joe Madureira ex-creative director of Vigil Games, has also founded a new studio with his brother Steve. The pair had worked together at Vigil on the *Darksiders* games and now they form one half of Airship Syndicate, where they are now making a JRPG-style game based on *Battle Chasers*.



Battle Chasers by Airship Syndicate is based on Joe Mad's original comics

"Pretty much all Vigil guys were our first four," Joe says. "We now have 12 guys jammed into a little room. We're probably insane. Everyone's just kind of a perfectionist, you know? We kind of planned from the beginning that everything would take a little bit longer than anticipated and we just shoot for triple-A quality. So far it's been very manageable. We just have an amazing team. I think really that's the secret to anything. Building that strong team from the beginning and letting them do their thing."

Another relatively new studio, Dublin-based Pewter Games, also surrounded themselves with good people as they hired for their hand-animated point and click adventure game, *The Little Acre*. As a fresh, inexperienced company on a low budget, they visited graduate showcases at universities in Ireland, where they found that they had the pick of the litter. "That was definitely an interesting thing, because Ireland has a very strong animation scene," Ben Clavin, co-founder of Pewter Games says. "So there's no shortage of jobs in the animation industries, but we were surprised going to these shows that we were able to approach what would clearly be some of the best students showcasing their work. Because there's not a ton of game jobs going in Ireland, they were so excited and almost turned down the bigger studios to come and work for us because of the creative freedom that we offered them. But also they got to work on a game, which is unique for Dublin."

Students may not necessarily have the experience of working in a professional game development environment, but their price tag reflects that. "We didn't have a very large budget," Chris Conlan, co-founder and CEO of Pewter Games explains. "So we just had to get people who didn't have ten, twenty years experience. Students were ideal, because a lot of them were just doing internships anyway, so for us to say 'look, we're offering an actual paid role, it's not a huge amount, but it's paid'. It was mutually beneficial. That's also the reason then why, although there's a lack of experience, we wanted to make sure we were getting the really talented ones."

An added benefit is that by hiring students you are getting people at the height of their passion. Starting your own studio and picking a small group of the right people means that you can ensure that everyone's passions align and that you're working with people who care deeply about the project. From here, as Supermassive's Pete Samuels says, it's about growing organically.

"There were about fifteen of us at one point in a room," Pete says. "Then we had to grow a bit more, so we had the wall taken down and we went into the next. And we kept taking walls down until we reached the end of the

The Supermassive team continues to grow in size and talent

building. And then we needed to grow some more, so we knocked the walls down in a different direction. It was very organic.

"It's not growth for growth's sake. Right when we were only 20 people and Sony said 'can you do another project?', we said 'yeah okay, we'll find a way to do that'."

These Move projects with Sony led to Supermassive being asked to help the publisher with a first-person horror Move game on PS3 that had been having development issues for a while. A game that would eventually become the PS4 exclusive *Until Dawn*. Supermassive had taken a risk getting to grips with new technology and it resulted in the studio finally coming within reach of the big, important games it desired to create.

"I talk about *Until Dawn* being a pivotal point for a number of reasons," Pete explains. "One was the recognition the team and the studio got for doing something different. People talk about their project being innovative and unique and they're easy words to bandy around. I'm not saying that about *Until Dawn*. What I am saying is the combination of things and the way that we applied them, and the focus that we gave certain areas. That combination gave it some uniqueness. That's dangerous and scary and credit to Sony for sticking with that."

Risks are unavoidable in the games industry and setting up shop by yourself is one of the biggest. But just like in a well-designed game, where there is risk, reward usually follows. Supermassive is now in a position where it can focus on its dual-channel development strategy of making VR experiences and cinematic narrative games. All because they saw those initial opportunities, weighed up the risks and committed to it.

It's easy to not take that risk and be scared away, especially if your project is unique and unusual. "The one thing I would say is don't get ruled by fear," Airship Syndicate's Joe Madureira says. "I feel like you can talk yourself out of doing anything if you start to rationalise. If people had warned me against getting into games, I might've chickened out. Don't let people say 'ugh, RPGs don't sell well. People don't like turn-based combat'. Whatever it is, if you're excited about it and you do a really good job, it doesn't matter. Nothing's popular until it is, right? Just make something awesome."

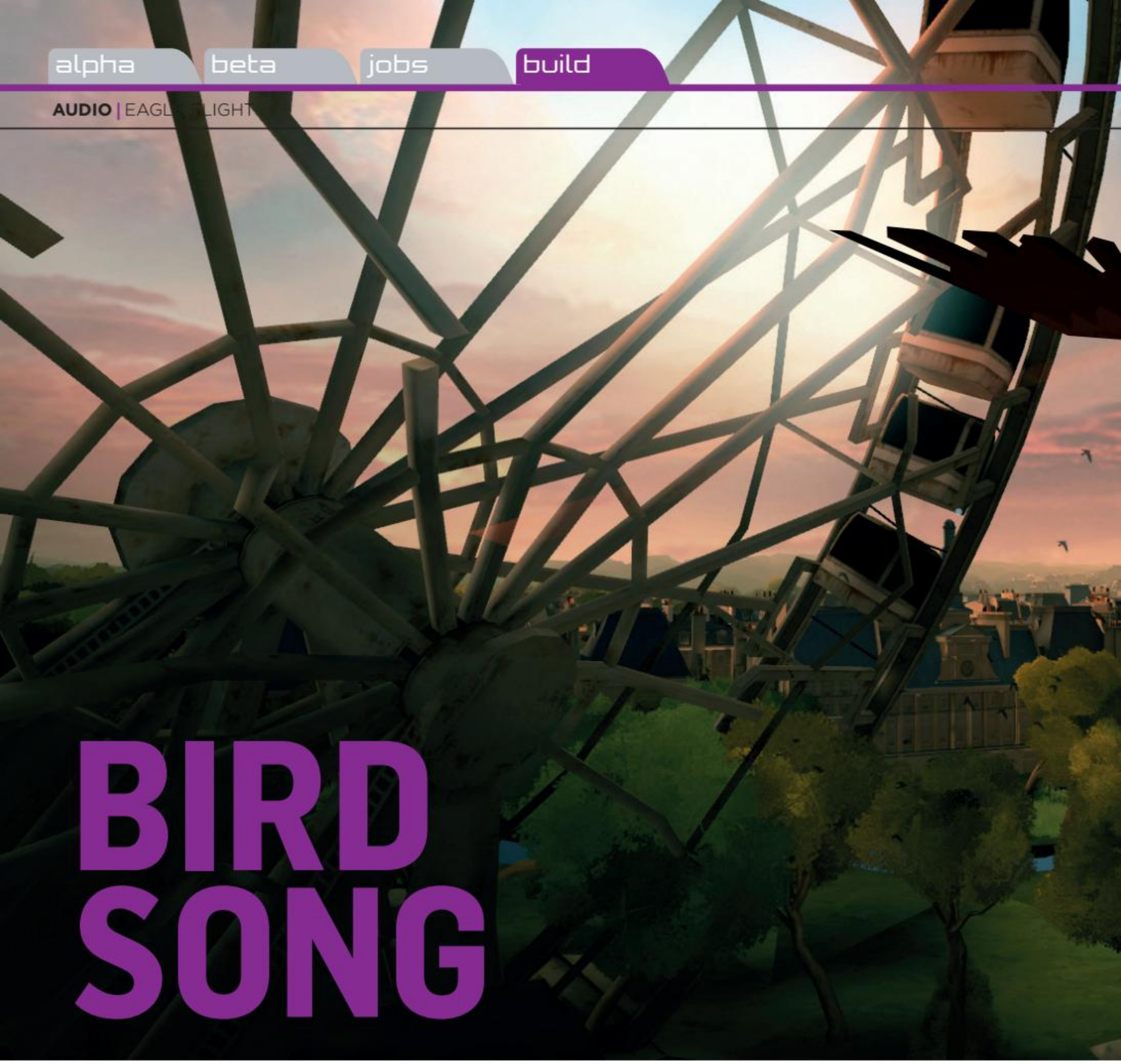
Likewise, the guys at Pewter Games feel their focus on hand-drawn animation is a risky move, but one that allows them to stand out from other games. "Our animation style is kind of a crazy thing to try and do," explains co-founder Ben. "It's expensive and it takes a long time. To have a character pick up a shovel takes a hundred drawings or more. As a whole, the industry isn't going in that direction so if you can't compete on a big scale, why not offer the platform holders like Microsoft and Sony something a little different. They want to flesh out their portfolio. They don't need another first-person shooter."

The Little Acre by Pewter Games features hand-drawn animation

Once you've built your studio and have a decent talent pool, who are learning on the job and developing their skills, the trick is fostering the right environment to make sure they stick around. "I think it's honesty that drives an open and collaborative culture," Pete says. "To work in a place where you get to work across teams, contribute to games even that you're not directly involved in, and to celebrate all our success as a studio. That's what I mean about collaborative and inclusive culture. That's why people enjoy working at Supermassive. We have very low attrition rates. For this part of the country, that says a lot because there are a lot of opportunities, but people stay. That's enough evidence for me.

"I think what also helps is the variety of the games that we make. They're not stuck on one thing for what can feel – in other places that they've worked – like a three year death march. I'd have to look and see if there has been a year where we haven't released something. That's important to us. It's all about releasing stuff."

"Setting up a business is easy. Always has been, always will be. Sustaining it for any length of time, and sustaining it even through failure, that's the hard part." ■



BIRD SONG

With a new kind of reality comes a new challenge in the world of games music. **Sean Cleaver** speaks to composer Inon Zur about his latest work on Ubisoft's VR title, Eagle Flight

To soar: 'fly or rise high in the air, or even increase rapidly above the usual level'. The definition of soaring becomes very apt when you look at *Eagle Flight*. Ubisoft's first VR game, released for the Oculus Rift and PlayStation VR in November, casts you as an eagle flying above an abandoned Paris reclaimed by nature.

Using tunnelling, a VR technique to reduce motion sickness, you can fly around at great speeds, darting around the alleys and treetops with nary a flutter of the stomach. However immersion in a world isn't just limited to the visuals. Audio is very important and music has a different job when it comes VR gaming. You don't want your soundtrack to remove you from the experience of the game which, in standard gaming, isn't a concern.

Tackling this challenge for *Eagle Flight* is Inon Zur, who has been composing for video games for over fifteen years. You might recognise his name from legendary titles like *Dragon Age: Origins* and Bethesda's *Fallout* games.

"I had an immediate wave of inspiration when I saw and played *Eagle Flight* for the first time," he tells me. "I understood that we would need to bring in some tribal influences in order to give the player a genuine natural world feel, but I also realized that this wouldn't be enough on its own and that we also needed to incorporate classical influences and the sound of the orchestra."

> **If SFX and dialogue enhance reality, music is there to enhance the story and emotions.**
>
> *Inon Zur, composer*

I have often found that flight is scored in a wistful and calming way, although that could be more to do with watching too many nature documentaries. Zur did not have these expectations. "Flight can be very calm and there are a few pieces in the score that convey just that. However, more

Music in Eagle Flight was specially designed for a VR experience

than anything else, the game is about embarking on a new and unknown adventure, and this is where I started.

"Since flying is what you do most of the time, I approached this aspect of the score from a different perspective – less dependent on 'grounded' music or heavy beats, but rather more on driving percussion and uplifting, melodic writing."

For those unfamiliar with the game, Paris's reclamation by nature has also seen the influx of animals, turning the ruined metropolis into a big, inner city safari park. Whilst the buildings have begun to crumble and the spires of Notre Dame now house your fellow Accipitridae, the streets and parks become lined with elephants and giraffes. It's more like a thriving savannah rather than a Parisian boulevard. It's this look and feel that help to give the game an identity outside of the calming winds that you hear.

"I used very simple tribal percussions so it sounds as primitive and 'back to nature' as can be," says Zur. "The vocals are an extremely important signature for the whole score. I wanted to try to 'sing the calls of the birds' and these vocals – tribal, short and simple – served our intentions perfectly and brought this to life."

When creating music for virtual reality, there are different approaches that need to be taken and according to Zur, after much consulting with experts he, and Ubisoft, "came to a very simple but profound understanding regarding music composition and mixing for VR games".

"Music in games (and all other media) is a component that serves a very different purpose in the sonic map. If sound effects and dialogue are there to enhance reality, the music is there to enhance the story and emotions," Zur says.

"While the SFX and dialogue should be influenced by and administered directly to the VR perspective, music plays a different role. Music is in your head, communicating the emotions. Therefore, the SFX should be mixed in surround but music should stay right between your ears, so music was mixed in stereo.

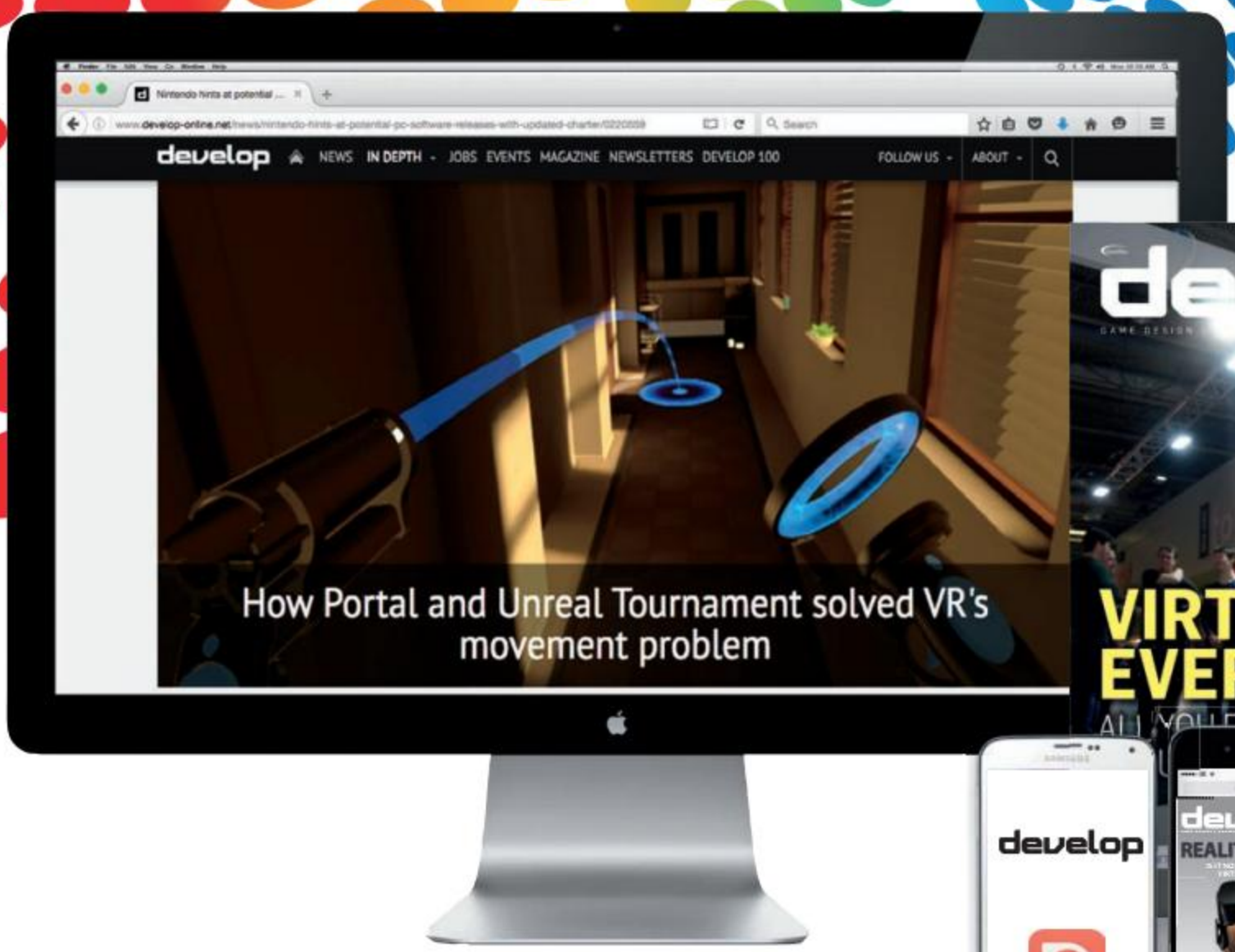
"This technique really helped to differentiate between the music and other sound components. It allows each one of the sonic elements to stand on its own and have an effective presentation without getting in the way of the other sounds."

The problem of emotional conveyance is another that is a difficult to master in virtual reality music. Whereas music normally helps communicate a feeling or a tension, that job is taken over by the immersive nature of the visuals. That job becomes harder when you add more players to the mix.

"With single player you only need to address an individual experience," says Zur, "but with multiplayer you need to try to capture the feel of all the participants."

Part of this is also down to the competitive nature of the game. As teams of eagles go up against each other online the need for tension to be amplified is key, but how you approach that in a VR environment is harder given everything that is already going on. Do you take a personalised approach or do you create a general music feel?

"The music needs to respond well to what each player is doing," says Zur. "So you can choose, for example, to divert the music to a positive (for victory) and negative (for loss) and each of the participants will hear a slightly different tune. Or you can just frame the action (which we did for most of this game) and play the general feel without taking sides." ■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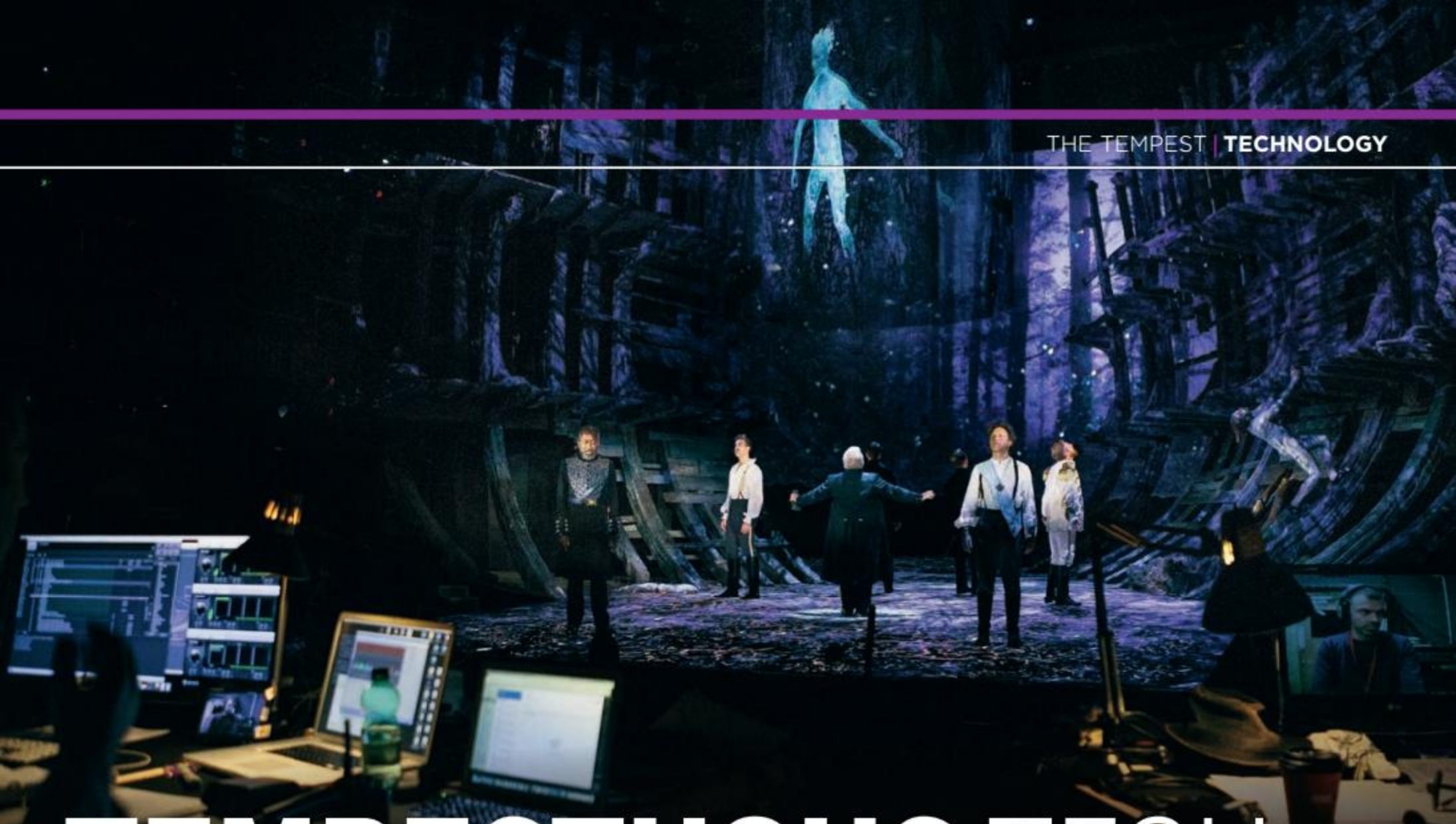


TEMPESTUOUS TECH

It's unexpected to see a 400-year old play push the technological boundaries of live stage performance, but that's exactly what the Royal Shakespeare Company has done with their latest production of The Tempest. **Jem Alexander** asks how games influenced the show.

William Shakespeare was way ahead of his time when it came to using technology for his performances at the Globe Theatre. Now, 400 years after his death, this spirit is continued by the Royal Shakespeare Company up in Stratford-upon-Avon. Its latest production of one of the bard's final plays, *The Tempest*, takes advantage of the Unreal games engine to bring to life the character Ariel in a way that's never been done before.

The RSC partnered with Intel and a London-based studio called The Imaginarium to put together the performance. Both companies have a large amount of experience in the games industry, which was vital in bringing to life the first live digital on-stage performance of its kind.

"The technical expertise of our team as games content creators was very useful," says Tawny Schlieski, director of client research at Intel. "But probably the more interesting bits are the pieces we needed to unlearn. For example, game controls are actually highly artificial. They are a mechanical system created to move characters and weapons around, not a reflection of human movement."

One of the more stunning aspects of the play is the fact that you have the actor and the avatar on stage at the same time, moving simultaneously. Not only does this ground the character to the actor, no matter its form (Ariel has a habit of changing shape often), but it demonstrates to the audience that these very subtle movements are being translated in real time.

"For our work, we needed a very nuanced set of movements. [The actor] Mark controls the avatar on a single plane, and the technical team controls his 'flight' in real time. Humans are very good at movement, and amazingly nuanced in their physical reactions. Capturing that motion directly from the human, rather than artificially generating it, is both cheaper and gives you a better result."

This need to use motion capture and games technology for the performance comes from the cutting-edge nature of the endeavour. "We don't have much choice. There is basically no kit dedicated to live digital performance; which makes sense, because we were doing this for the first time," Schlieski says.

"Using existing software allows us to experiment rapidly, and have solutions that we can share with audiences. Seeing how audiences respond is a key piece of our overall development strategy. Gaming engines also have the advantage of being relatively accessible, which allows new artists, like the ones at the RSC to learn and produce rapidly."

The foundations that have been set with this performance should pave the way for more crossover between theatre and games in the future.

"To really empower performance, we need stronger tools to produce different and more interesting movement," Schlieski continues. "New gaits and more flexible torsos are much more interesting than bigger explosions and better weapons inventory management. It will be interesting to see who creates the new mods that power these new priorities."

Games industry professionals will be highly sought after to jump ship to the performance art space, thanks to the wealth of knowledge they have to offer to develop live digital productions such as this.

"Talented game developers have a great set of core skills to move into new kinds of content creation, like live performance. I think the developers who move the fastest and the farthest will be the ones who can rapidly adapt to their new teams. There are a thousand little things that are different about working in a theatre company: deadlines, implications of change, chain of command... The dynamics are very different, and core skills alone don't make good teammates. We're all going to have to learn the ropes together."

Improvements to the technology will feed into future performances, which are likely to happen at the RSC and beyond, according to Schlieski: "The artists who created *The Tempest* are most definitely planning to use the kit again, and I believe that many other live performers will as well. To quote Gregory Doran, the artistic director of the RSC, 'the genie is out of the bottle, and she isn't going back in.'" ■

PULLING ANIMATION'S STRINGS

The Jim Henson Company isn't poised to start offering developers middleware. But the team there has been working on a game engine for several years, as part of an animation technique plump with potential across many disciplines. **Will Freeman** investigates

Puppetry is a truly ancient craft. With some five millennia of history as a practiced art form, it can make the history of the video game seem rather trivial in scope.

It's a form of entertainment traditionally free from technological complexity. As such, it doesn't seem like game developers have much to learn from puppeteers, beyond universal insights into characters and storytelling.

Inside a vast studio space in Los Angeles, however, an iconic entertainment company is doing a great deal to close the gap between the approaches of game development and puppetry.

The Creature Shop – itself part of the family run Jim Henson Company – has been perfecting an approach it has named digital puppetry for many years. In combining mo-cap, puppetry, performance and game technology, it hopes to bring a little more of the human touch into the digital realm.

The Henson Digital Puppetry Studio is a virtual production facility. Here motion capture convention is split in two, to allow teams of puppeteers to perform in unison and have their movements captured by a game engine before being sent out to various other digital production tools. That split divides a character at about the neckline, with one performer enacting body movements, while a separate puppeteer operates facial gestures.

STANDARD OPERATING PROCEEDURE

In a typical shoot, a performer – who may or may not be strapped into a physical puppet – moves as directed on stage, watched by an array of motion capture cameras. Meanwhile offstage, a puppeteer uses two custom hand controllers – usually a flight-type stick and a waldo – to manipulate the facial muscles and head movements, just as they would on a physical contemporary puppet. Ultimately the concept offers a mo-cap method where body performer and head puppeteer movement is captured as data fed into a custom Henson game engine.

> **We've had to create input devices very similar to game controllers**
>
> *Steffan Wild, Henson Digital Puppetry*

"The digital puppetry concept comes from the fact that a traditional puppeteer works in a real-time environment," explains Steffen Wild, head of digital production and director at the Henson Digital Puppetry Studio. "What that means, of course, is that they are working with a physical puppet in front of a camera. It's a live performance, with spontaneity and so on, where the puppeteer gets immediate real-time feedback.

"What we at Henson have had to do over time is bring that tradition of puppetry into the digital realm, but retain that real-time feedback for the performer.

"So we've had to create different input devices very similar to sophisticated game controllers. But more than that, we've written our own game engine to work with the puppeteer."

Ultimately the technique is a distinct spin on the conventions of motion capture. But, says Wild, it offers something more. Something no amount of key framing and rigging can rival. Great things can be done by a sole motion capture performer impersonating a creature with a wildly distinct physique to their own, of course, but that isn't the only approach available today.

"The advantages of digital puppetry goes back to traditional puppetry," Wild offers. "Back when Jim Henson crafted his approach to the medium in general, the consensus and the paradigm was 'anything that moves in front of the camera only moves because it was moved or performed by a human hand'. That same concept extends into the digital space. Anything that moves only moves because a person touched it. The human element is integral to digital puppetry."

And, says Wild, digital puppetry can apply that in a rather unique way, lending the puppeteer's craft and the finesse of the human hand where desk-bound animators or an actor's facial limitations have different contributions to make.

"This concept allows for human spontaneity in the digital realm," he continues. "Because of the human element, digital puppetry is a very spontaneous and creative process, that can lead to things that we didn't anticipate. That can be great for the director, who can decide on the day what works. Something that was a mistake in a puppeteer's performance might turn out to be integral for a shot, and that's the human element we hope to capture.

"Now we can capture something else through puppetry," Wild later adds. "I can always see – even if the same puppeteer would perform two different characters – characteristics of an individual puppeteer's movement and their style. Whether conveying a feeling of happiness or of disgust, the puppeteer behind the creature shines through in their own way. Digital puppetry can capture that, and it's human and heart-warming to for the audience to connect with that. That emotional connection is a big part of what Henson does, and what visual effects tries to do."

> **Henson was one of the first companies that embraced game technology wholeheartedly.**

IS IT A GAMES ENGINE?

A means to harness the skills that have let The Jim Henson Company connect so meaningfully with so many audiences for almost 60 years makes for a powerful proposition. But that doesn't explain away all that talk of a 'game engine'

Let's be clear. The Henson team didn't develop this technique or technology with games specifically in mind. But they stop short of branding their solution a 'puppetry engine'. In part, the answer to that naming convention is that Henson have long strived to transcend the divisions that separate disciplines and mediums.

"Digital puppetry is de facto a virtual production stage that is powered by a game engine," Wild asserts. "So in that respect it could be applied to all the disciplines in this space, from traditional visual effects to games. I think Henson was one of the first companies – because we've been working with approaches like this for over a decade – that embraced game technology wholeheartedly. A game engine is a core part of what we do. I have many conversations with other industry professionals and leaders, in terms of looking at where the animation or visual effects or games business might go, and one thing that doesn't take me or the Creature Shop any real thought is the idea that we are all moving towards real-time more and more."

But the engine created at Henson doesn't just bear a loose comparison with game-specific middleware. The heart of digital puppetry is what Wild calls a 'full-blown game engine'.

"We wrote our own, starting about a decade ago," he says. "The main reason we did have to write our own game engine was the fact that we wanted to get data streams out of the game engine into traditional packages such as Maya in very specific ways. Outside of that, the technology is similar to what you might find in Unity or Unreal.

But from the company standpoint, we completely acknowledge that we're not in the business of yet writing – or offering to the market – another game engine."

However, that doesn't mean that Henson isn't able to use its technology to make games.

MARIONETTE WORTH

One of the other advantages of Henson's digital approach – which also supports the long-established puppetry method of using several performers to operate one large creature – is that the content it spits out can be applied universally to many media forms.

"This stage that we have – that we've called a digital puppetry virtual production stage – is a melting pot for so many disciplines coming together. We see it influencing the types of characters we are creating. In the past we had characters that used different resolutions, so a character geared for films and a character geared for games and so on. Now we have one character that can move across all the different areas, whether it's being used in marketing or in consumer products or in games – because we do our own apps and games – or if it is needed in a feature film. We're doing that right now. This way we can use one character everywhere."

That defining ability of building a character shaped by the human hand that is ready to leap from medium to medium is indeed a powerful idea, especially at a time when developers large and small are increasingly looking to build brands that transcend the game form.

As such, digital puppetry is a technique every games maker with an interest in animation should investigate. Henson isn't known to be preparing to serve game developers with this approach, but they are a company committed to knowledge sharing across creative disciplines. And considering how long those involved have been charming the world with their character creations, it seems game studios have as much to learn from puppeteers as Henson have taken from game middleware. ■

Better late than never: after nine years, Owlboy is out now

OWLBOY... TELL ME THE SECRET OF YOUR POWER

After nine years in development, D-Pad's 2D pixel art platformer Owlboy finally released in November. **Alex Calvin** catches up with programmer Jo-Remi Madsen to find out about this adventure nearly a decade in the making

2016 has seen many long-in-development projects hitting shelves.

By the time you read this, both *The Last Guardian* and *Final Fantasy XV* – games that were announced seven and ten years ago respectively – will be on shelves.

Then there's *Owlboy*, a 2D pixel art platformer title developed by D-Pad Studios, which was in the works for nine – yes, *nine* – years. The game was originally set for release in 2011. The company even said as much in a trailer released that year but, in fact, the title wouldn't be released for another five years. So what took so long?

"Oh, we made so many mistakes," programmer Jo-Remi Madsen says.

"We released a demo together with that trailer and in the first couple of days a million people had downloaded the game. They started giving us feedback on it. We decided to rework almost the entire game based on their feedback. Even though the game was slated for that very same year, we ended up with five years of improvements and rewrote the story. A lot of the reason why it was delayed so long was because a lot of things changed in our lives in particular. Therefore, things changed in the game too.

"There's huge danger in changing things inside a game. if you write a novel and change a character's name or give them a different trait, you need to rewrite the entire book to accommodate those changes. That's essentially what we had do. Every time we made a little change it could affect the entire game and we made hundreds if not thousands of little changes. That's why we sat with it for so long.

"We also weren't really happy with the result. Despite us not being writers at the time we had decided to give the game a huge story element. That was something we learnt while we were working on it. Across almost ten years, we have learnt how to write a story. It was only in the last two years that we actually started focusing on the narrative. Now, most of the people that play *Owlboy* actually enjoy the story so much that it's weird to me that all the elements finally fit together so well – the graphics, the music and now also the story. It was surprising to me because i've always made silly small action games with no story at all."

SUPPORT NETWORK

Projects like *The Last Guardian* and *Final Fantasy XV* were backed by massive corporations with deep pockets, so you can understand how these titles continued to get support. But for a small indie studio, surviving a bruising nine-year development cycle is much more of a strain.

"The major part of our support came from my parents. They had an apartment next to their house," Madsen explains. "Their intention was to rent it out to people, but then I met Simon [Stafsnes Andersen, art director] and asked them if he could live there while we working on the game. He didn't have assets at that point, so my mum said we could live there for free. I don't think at that point they realised that he was going to live there for five years. But they never seemed to stop wanting to support us. It just continued like that for a good long while. Even though we couldn't pay our rent, we continued showing them whenever *Owlboy* had been getting some media attention and stuff to show them that the project was still being talked about.

Owlboy's pixel art style stands out even among similar games

"I guess I was pretty nervous that people would think that the game had no potential. That's the biggest relief, because the game is being talked about a lot. We did so well both on Steam and other platforms. My mum and dad have been very impressed.

"The Government of Norway actually has a game development fund, which we applied for a couple of times. After a while, since we promised the game would be coming out in 2011, I got really bad stage fright every time we'd come up there and pitch the game because they would support us I felt kind of bad that we hadn't finished the game yet.

> **This year, some of the greatest titles are indie titles.**
>
> *Jo-Remi Madsen*

"At the first round we got the equivalent of £10,000 for development. That helped out a lot, even though it wasn't enough to finish the game because it was five years before we released anything. It was enough that we could live rent-free at my mum's place and still be able to afford food."

MISSING OUT

Had *Owlboy* made its original 2011 release date, it probably would have been viewed as a pioneering release. A modern platformer using exquisite pixel art would have been a headline grabber back then, but in 2016, we've already seen that selling point in the likes of *Fez* and *Shovel Knight*. Was it scary to see that market – and all that competition – emerging in the indie sector?

"To us, it was kind of frightening," Madsen admits. "But at the same time, we were happy that people had started to embrace both indie games and pixel art. This year, some of the greatest titles are indie titles. We're kind of happy that even though a lot of people are under the impression that indie games are unprofessionally made and smaller projects with no ambition, normally it's the other way around. *Undertale* was a game that proved that point. They tried to do something that came as a huge surprise to everyone. *Hyper Light Drifter* is another huge title. It had been nominated for at least two Game Of The Year awards. So I'm just really happy that people have changed their view on indie games. But it also means we are in for a bit of competition.

"But that's never really been a huge concern of ours because we're not a big company and our competition doesn't necessarily draw any attention away from us. Rather, it probably gives us more attention. It's not been a huge concern really. Some of those games proved that you can make break-out hits even while using pixel art. Simon's goal with *Owlboy* was to prove that pixel art still belonged in this era even though a lot of people seem to think that it's a medium that can't be pushed anymore and that we should leave it to the '80s or '90s. Simon's goal was to prove that pixel art can be used to make amazing looking games still. Then you have titles like *Shovel Knight* – everyone who plays it says looks great. Even though it's got that crappy 8-bit look, they made it so streamlined that everyone just goes 'yeah, it looks pretty good'."

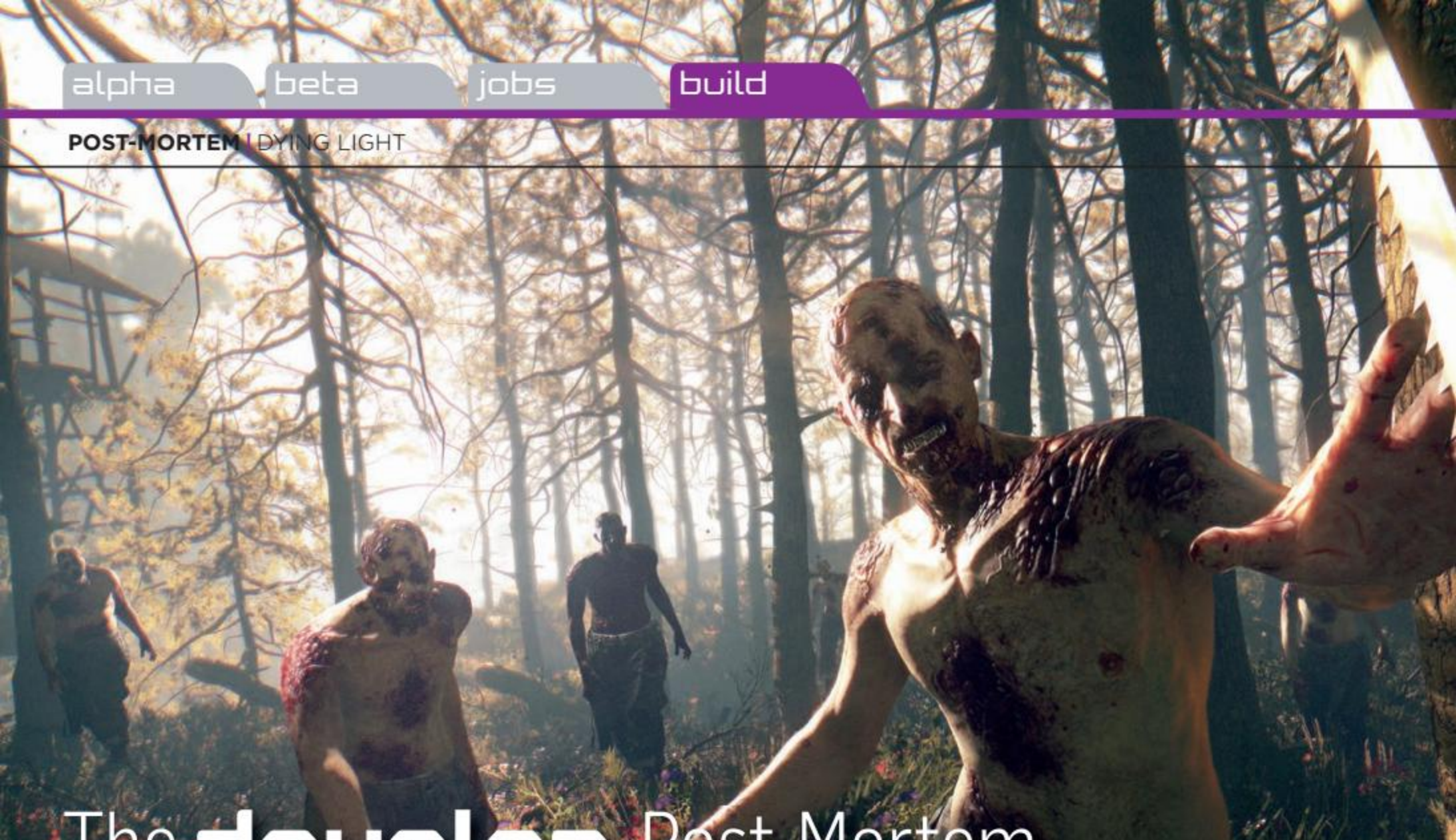
But now that *Owlboy* is out, the team is feeling a variety of emotions.

"[We're feeling] fright and relief," Madsen laughs. "Even though *Owlboy* is out now, it feels like we are maintaining it still. I guess the games industry changed at some point – even though you release a game you aren't done with it."

That feeling may also be down to the fact that there are still more platforms for the game to release on.

"If we launched on console and PC simultaneously, it would put a lot of pressure on the team and I think it wouldn't have been received quite as well because it would have had a lot of issues in it that we couldn't have fixed in time," Madesen explains.

"That's why I'm super happy with the way we did things. Next year, we'll of course try and get the game out for consoles because there are so many people asking for it. It would be stupid for us not to pursue." ■



The develop Post-Mortem
DYING LIGHT

From a potential sequel through to independent project and finally successful game, **Sean Cleaver** talks to Techland's Tymon Smektała about the storied production of Dying Light

For a while it was one of the most talked about topics in video games. *Dead Island* creator Techland decided to leave the franchise behind, opting instead to create a new game for a new publisher. The Polish studio's vision was of a more focused, less comical game and, as is now video game legend, a split occurred, sending developer and publisher in separate directions.

"For us it's history," says Tymon Smektała, a producer at Techland. "The publisher wanted us to make another game in the vein of *Dead Island*. If *Dead Island* had four player co-op then the new game would have eight player co-op. If it had 100 weapons then *Dead Island 2* would have 200. I think that was an okay direction for a potential sequel. A game that was bigger, better and more badass than the base game."

The difference in artistic direction became a sticking point for Techland, a studio that was looking to forge its own identity in the games arena.

"It started with a list of things we wanted to improve after *Dead Island*," says Smektała. "We kept adding to that list and soon realised that we were talking about a completely different game than *Dead Island*. So we made the decision to create a new IP with new gameplay."

> **There are two vital mechanics in the game. Natural movement and the day and night cycle.**
> *Tymon Smektala*

At this point the project needed to be solidified. "There are two vital mechanics in the game," Smektała says. "One is the natural movement system for the parkour. The other one is the day and night cycle. We started to prototype those two things using *Dead Island* as a basis for that. It's easier to get a grasp of what it is and how it behaves if you have some kind of foundation. Of course we made a lot of mistakes first. It was very hard to get the approach right."

RUNNING FREE

As development of the game branched out into the creation of the parkour movement, different approaches surfaced and the team decided on a *Mirrors Edge* style system with accessible movement points. Smektała explains, "our first approach was to just manually place thousands of hooks on the level. Those were the places where the player was able to interact with a ledge. We instantly realised that adding that parkour element to the game would really change the feel of the game. But then we realised using that approach that we wouldn't be able to reach the level of freedom we wanted to achieve."

As with any design process, trial and error is key. For such an important mechanic, the team needed to quickly identify what was wrong and how to change it. "When we started playing we realised there were places that you weren't able to climb over, that a human in those situations would be able to climb," Smektała continues. "One of our programmers, Bartosz Kulon (known as The Head), came up with the idea that maybe we could analyse the geometry of the level as the player moves and play correct animations when he tries to climb over ledges, and interact with objects and obstacles.

"So he did a quick prototype and we realised that if we want to go the parkour route then we need to go with what he proposed.

"It was two years, maybe even more, of tweaking to make sure the system worked right and solving all of the problems with motion sickness. Presenting the moves in first person perspective – it was a lot of work nailing down the correct camera movements so it really gives players the impression of being this parkour specialist that traverses the environment."

looking for environments that were full of openings, like windows or interiors, that could serve as parkour routes for the player, like the Rochina favelas of Brazil. We tried to create one city using various places as inspiration, such as Mumbai, especially in the Dharavi locality, Istanbul and our own city of Wroclaw for the old town."

A lot of the look of the city was down to Jula Arendt, the level artist who is also a qualified architect. "She worked as an architect and has about 60 buildings that exist in the real world that are still standing, so that speaks to her skills. She tries to make the cities as realistic and as believable as possible, so she uses all of her architectural experience to create a fictional history of the city. How that history and the events of that history would change and shape the city and the architecture. She's also very keen on gameplay and has a good eye for it, so when she was creating reference points for the other level artists she always tried to introduce elements of gameplay to what she was doing."

As with the natural movement system, there was still a lot of trial and error in making sure the city worked and Smektała is keen to stress how much of a team effort it was.

"What we achieved in gameplay was because of hundreds of iterations. We have a strong team of testers who are very focused on looking for gameplay and anything that can be an obstacle to gameplay. We introduced an element where a player can progress with their parkour skills. I don't know if anybody noticed, but when you start the game you have a set of animations but they are quite simple, a little sluggish. They don't give you that feeling of flow. But as you progress through the game you'll buy certain skills you get new animations for the various moves.

Dying Light's expansion, The Following, adds drivable buggies

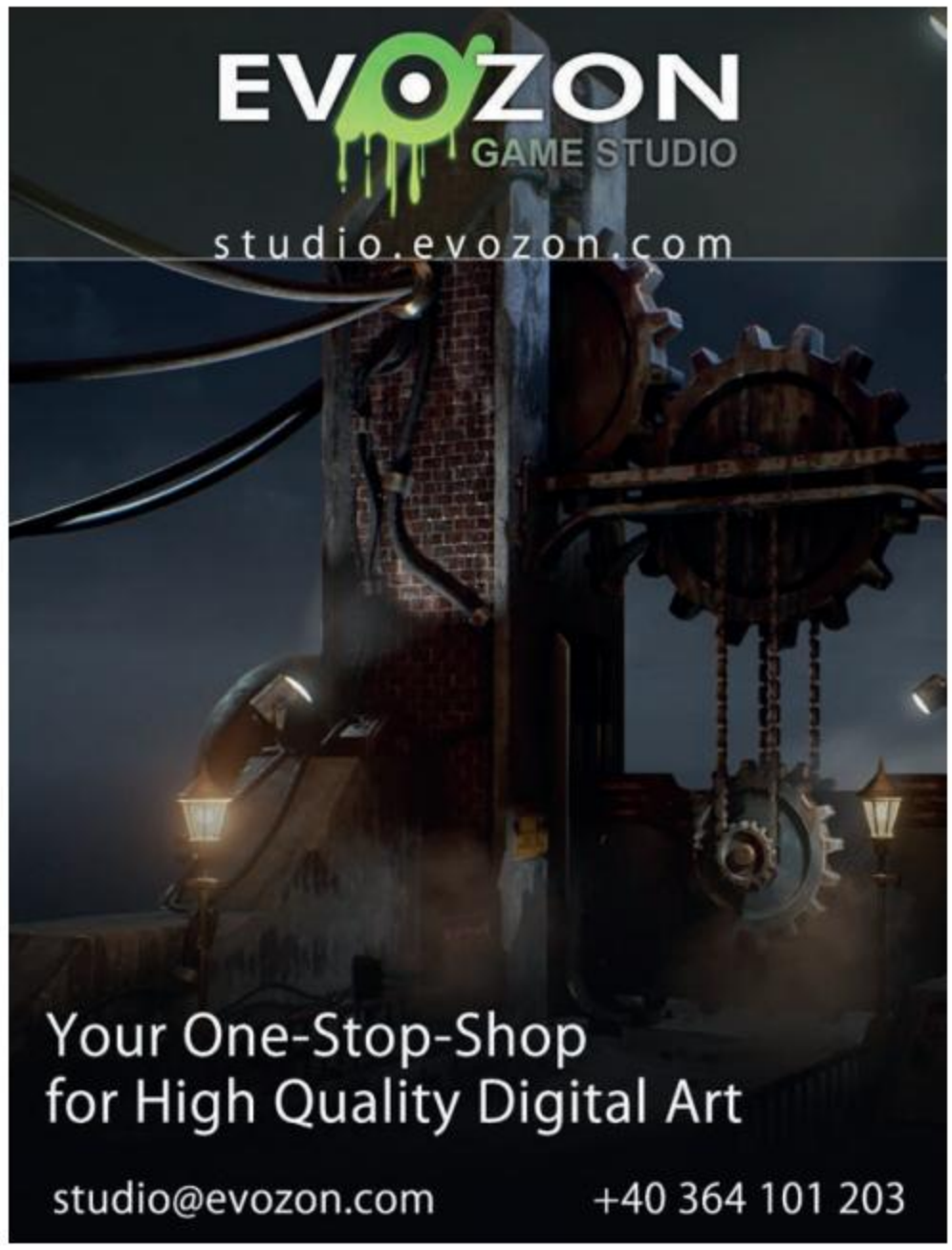
We had to prepare almost four sets of animations to be able to support and reinforce that the player progresses with their parkour skills. We created the game on our own engine called Chrome, so for us it's easier to work in that environment where you are able to introduce new features that support your vision of your game."

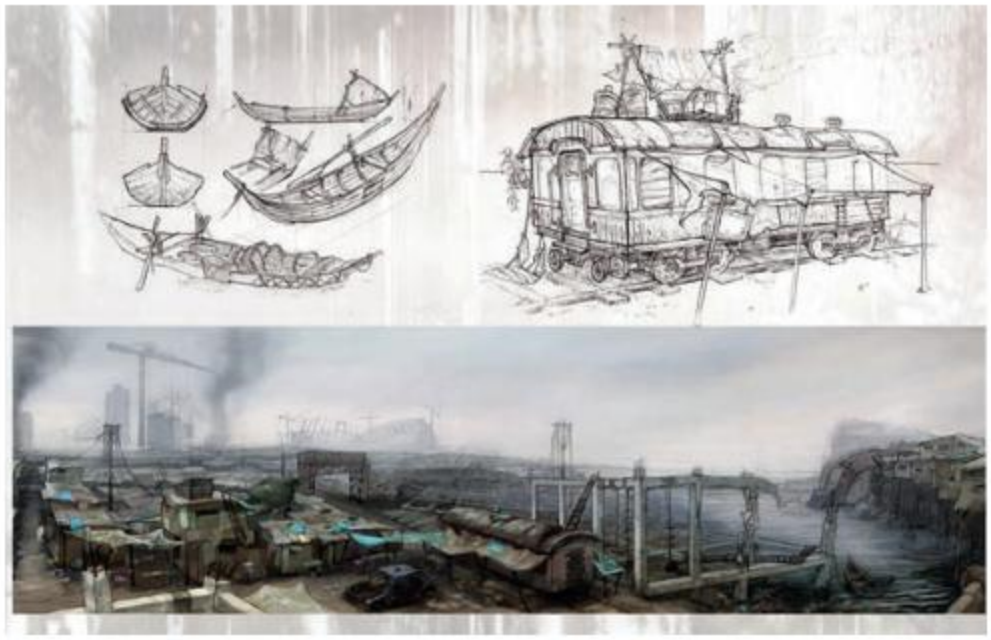
FORWARD MOTION

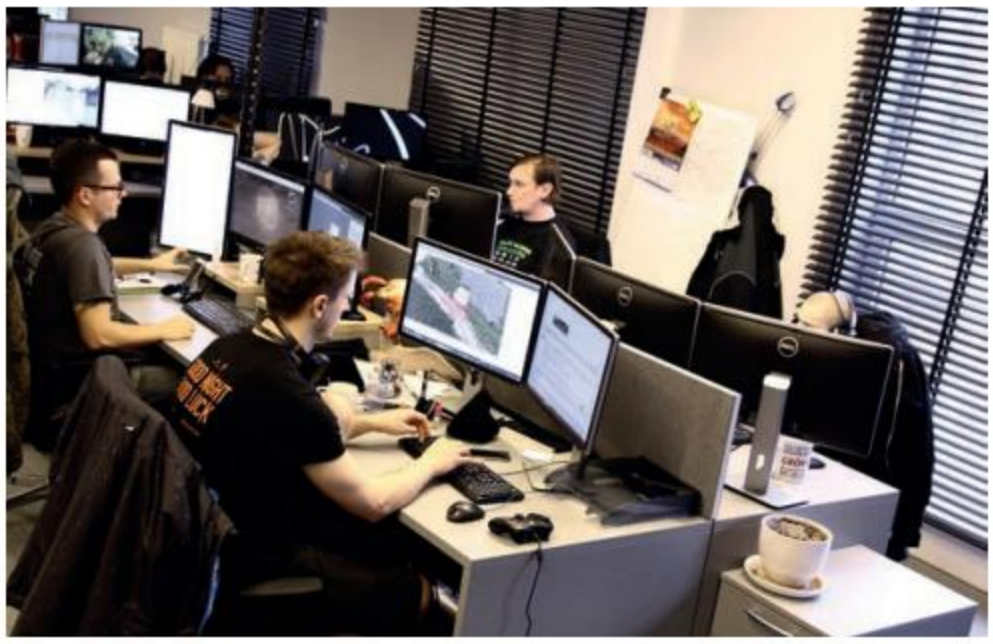
One of the big problems was originally planning to release on all of the available consoles, including the Xbox 360 and PS3. Again, this became quite a well know issue as the team eventually abandoned those versions. "It was limiting for us," says Smektała. "It was limiting in terms of the map size or the number of AI's you can spawn around the player. It's very important in a zombie game that the

WISH YOU WERE HERE

Having to completely change one of the core systems of your game is a risky move, but by this point Techland was no strangers to risk. The reward of the day/night cycle, the second mechanic, is the beautifully realised world of Harran. It's a completely fictional location, but with many inspirations. "We started creating the city of Harran by looking at various interesting places all over the world. Quite early we nailed down the idea that we wanted to place the game in Middle Eastern territories, but we didn't want to recreate an existing city. We were







zombies, maybe not the smartest of enemies in the history of games, still have a lot of AI work done, especially as we had enemies that were able to move with almost the same fluidity as the player. It was a huge weight on the processing power."

The decision to halt development of these versions was not an easy one for Techland, relatively low install base of next-gen consoles. "We didn't want to be constrained because we wanted to deliver a game that would make Techland a household name in the games industry and in the players minds. So we took another big risk," Smektała recalls. "I remember the conversations at the time when the decision was made and there was a lot of sleepless nights because it could really impact us on a business level. But we realised if we wanted to make something that would build our legacy, and cement our name as a developer, we needed to move forwards and skip older platforms. Our CEO really wants Techland to be able to complete with the biggest game developers in the world and he kept pushing on all fronts, so it was very important for him to showcase the power of new consoles of our engine."

BUILDING A FOLLOWING

A year after the game released in 2015, plans were made to create *The Following*, a full single player expansion. This did not go exactly to plan especially as *The Following* changed from a close-knit city to a massive open environment. "Adding a vehicle to the game might seem like a no brainer, having fun driving over zombies with them. But when you start thinking about it, vehicles are something that works against the pillar of our game. Our game is about parkour. About being fluid and being able to move through the urban environment on your own feet. Now we're taking you to this new map, it's not a urban environment, but rural. It's completely different, very flat, and we add vehicles so you don't need to parkour anymore. It was a brave move on our side. Of course, we introduced a lot of elements that still require the players to use the parkour that they learned. But we were able to add a huge element that a lot of people asked for without realising the consequences of that addition."

The attrition of what players wanted and what the game could provide was managed well by Techland as soon as they realised that these new mechanics also needed risk and reward. "We realised that maybe we could just take that risk and add something completely new and counter what we did before. But if we make that element good, we can enrich the experience and create an ultimate zombie game. We did lots of parkour routes to traverse from safe zones to cities. When we started *The Following*, you could drive over zombies without any consequences, but then we changed it so each time you hit a zombie, it deteriorated your car a little.

So there was this risk and reward. To escape you need to keep to the roads, but of course we added a lot of obstacles on the roads so it supports various player decisions. There were lots of small and big things that allow us to keep at least the essence of *Dying Light* and add some more elements to it."

Making sure that *Dying Light* was a game that worked was tough and, according to Smektała, became tougher as time went on. "We need to accept that there will be no more perfect launches in the future for almost anything. Games are getting more and more complex. The relations and interdependencies between games and platforms like PSN and Xbox Live are getting so complex that it really is extremely hard to test the game in the live environment."

But after all of the trials and tribulations, Smektała thinks that they've made a great game, and one that Techland has learned valuable lessons from. "Creating a game for me is always a hit and miss process that gives you lots of experiences and lots of problems and solutions that you try to remember for the future. One thing we learned on a more general level is that if you have a vision for your game, then keep pressing for it. Keep using whatever you need to use to fortify that vision and make sure that you don't give up. Be ambitious and stay ambitious if you want to create a game that really resonates with people." ■

SERVICES SPOTLIGHT

SUBSTANCE SOURCE

Allegorithmic have added to the Substance family by introducing Substance Source, a new high resolution asset library. So we asked them to tell us all a bit more about it.

Developer: Allegorithmic
Website: https://www.allegorithmic.com/products/substance-source
Price: Included with Substance Live Indie ($19.90/month) and Substance Live Pro ($99.90/month) monthly plans. Studios can purchase a site license with full access to Substance Source including 12 months of updates for $2990.
Key Features:
- Physically Based Materials designed for PBR workflows
- Generate infinite variations from a single substance file
- Get multiple outputs for all workflows: Classic, PBR metallic, roughness, specular and gloss
- Export materials at any resolution and up to 4K for use on any platform

What is Substance Source?

Substance Source is a physically-based material library where artists can get high-resolution customisable assets for any type of 3D project.

How does this work with Allegorithmic's other software?

All content on Substance Source can be used with Allegorithmic's software – tweaked in Substance Designer or in Substance Player, used in Substance Painter – or exported to game engines and renderers for in-engine / in-renderer tweaking and customisation.

What game development problems do you see Substance Source solving?

Substance Source is just that: a source of inspiration for artists who don't want to start with a blank page, or who want to save time with pre-made content that is customisable at the same time. Artists can also use Substance Source content in most 3D applications – it's not tied to the Substance tools, so if you want to use a material directly in an engine or renderer, you can, and tweak within the engine or renderer.

What do you get with the plan?

Substance Source is now included at no additional cost in the Substance Live Indie monthly plan, which gives access to 30 downloads per month plus the latest versions of Substance software: Substance Painter, Substance Designer and Substance B2M. There is also a Substance Live Pro plan which includes 50 downloads per month, plus access to all software.

How are you supporting higher fidelity assets such as 4K?

All Substance Source materials can be exported at any resolution up to 4K.

Don't you run the risk of people using the same assets?

One of the reasons we created Substance Source was so that we could offer assets to a wide variety of artists, ranging from game artists to architects to furniture designers and advertising creatives. It is possible for multiple artists to use the same asset in very different ways. We believe that there is enough for everyone in Source, and that the range of uses for the assets is limited only by imagination. With customisation options for all assets, artists will be able to tweak assets to match their creative vision.

What are Source's future plans?

Substance Source is an ever-growing library with new content being added continuously, and new parameters and customisation options being added to existing content.

We are at work developing partnerships with more content providers, and producing more content ourselves, to make sure that Substance Source keeps growing.

We also have a surprise or two for the coming months.

On top of that we have our first collection geared towards architects and architectural visualisation professionals called Substance Source for Architecture, which was released in mid-November 2016. ■

HEARD ABOUT

ROBINSON™

THE JOURNEY

John Broomhall talks with Simon Pressey about developing sound, dialogue and music for the flagship VR title from Crytek

When space colony ship Esmerelda experiences a catastrophic disaster, 12-year-old Robin finds himself the survivor of a crash landing and sets about exploring a new planet, discovering a remarkable environment populated with incredible flora and dinosaurs.

As director of audio, Simon Pressey had ultimate responsibility for the overall audio output of a team dynamically assigned to the project in various configurations as it passed through various production stages. It included seven audio designers, two narrative designers and an audio production manager, all in Frankfurt, plus composer Jesper Kyd in LA.

According to Pressey, the bar for Robinson's production values was set high across the board, meaning a 'fanatical' attention to detail for audio: "We've created a totally complete and coherent new virtual world. Every creature – from the brontosaur to a cockroach – all make sound. This huge vibrant interactive world is alive with dynamic binaural 3D sound. VR visually takes immersion to a new level and for that immersion to be complete, believable and engaging, the audio has to complement and reinforce it. The Robinson team is very aware of how much audio brings to a successful VR experience. The collaboration and feedback from every discipline has been a sure indication that audio counts and delivers."

Pressey cites 'narrative presentation' as a key audio-related challenge, resulting in a new approach: "We created a system we call 'Dynamic Response' – we're dealing with an open world game and we needed to deliver the story in a non-linear way. Doing this in a conventionally scripted and essentially linear fashion was just not going to allow the immersive, explorative discovery and interaction that's so unique to Robinson's VR experience. The DRS (Dynamic Response System) keeps track of which aspects of the story you've learned, the gameplay you've encountered, the current situation and more, in turn making the best choice of available dialogue to present to the player at any given moment. It was a seriously ambitious departure from traditional scripted dialogue. We think it will be a game changer - not just for VR but for all games."

SUBTLE COMPOSITION

Meanwhile, Robinson features a score by composer Jesper Kyd. Figuring out the right music design approach was not without its challenges either: "We found music had to be totally coherent with the entire world and narrative, the key design pillars being Robin's story and perspective and the world and mission of Esmerelda. The music continually makes reference to them. We intentionally kept it simple with the Satie-esque compositional minimalism.

"There's also a cinematic approach, with music used to help direct the player's experience. For example when you first see a vista of the world you've landed on, one music cue expresses all the emotion connected to that – wonder, potential, loss, resolution – all implied in a way that words can't. Subsequently, elements of that music cue echo throughout the rest of the story and score."

> **We think it will be a game changer - not just for VR but for all games.**
>
> *Simon Pressey, Crytek*

John Broomhall is a game audio specialist creating and directing music, sound and dialogue **www.johnbroomhall.co.uk**

UNREAL PERFORMANCE

From Shakespeare to Senua, Unreal-powered projects have been changing the face of entertainment

The doors opened recently in Stratford-upon-Avon for The Royal Shakespeare Company's bold new production of William Shakespeare's *The Tempest* in collaboration with London-based digital studio The Imaginarium Studios.

For the first time in history, a digital character driven by live motion capture is featured in a major classical production, and it's all rendered using Unreal Engine. The groundbreaking performance, which runs until January 21st at the Royal Shakespeare Theatre, is pushing the boundaries of traditional theatre and live entertainment.

In the production, the actor's facial and body movements are captured, rendered on the avatar in real time and then projected onstage to create a 'digital apparition' of Ariel, a sprite that interacts with the onstage actors in front of the live audience.

"This exciting and ambitious project hinged around our use of Unreal Engine," said Ben Lumsden, Head of Studio at The Imaginarium Studios. "Real-time computer graphics are advancing at an exponential rate and Epic Games are at the forefront of that curve. The audience reaction has been overwhelmingly positive. It feels like a brave new world for the arts!"

Throughout 2016 Epic is leading the revolution in live motion capture, photorealistic rendering, and cinematography through the continual advancement of Unreal Engine technology.

Epic showcased Unreal's capabilities during a live, real-time cinematography performance of Ninja Theory's *Hellblade: Senua's Sacrifice* at SIGGRAPH 2016. An animated short film was captured and edited to final production quality in Unreal Engine in five minutes.

SIGGRAPH organizers recognised the demo, giving the teams behind it the award for Best Real-Time Graphics and Interactivity. In November, that collaboration also received TIGA's Technical Innovation award.

"We're honoured to receive the Best Real-Time Graphics and Interactivity Award for the second year in a row at SIGGRAPH and to earn the Technical Innovation award from TIGA," said Epic Games CTO Kim Libreri. "This demonstration required the teams at Epic Games, Ninja Theory, Cubic Motion and 3Lateral to challenge ourselves both technically and creatively to think about the future for real-time cinematography and deliver a working example of what is now possible through the power of Unreal Engine 4 and the Sequencer tool."

"Now, our hope is that artists and technicians are empowered to employ these technologies and techniques to usher in a whole new generation of real-time cinematography that will take interactive entertainment and storytelling to a level of efficiency and quality never achieved before."

Lifelike digital humans and performances are already being achieved through independent teams with breakthrough performances like *Grace* by MacInnes Scott, which features a digital heroine who lives in virtual reality, augmented reality and 4K 2D video.

Grace is the synthesis of MacInnes Scott's team who have leveraged the power of Unreal Engine 4 to propel her to the forefront of photo-real interactive performances in real time on VR devices, on phones or tablets and through YouTube.

From reinventing Shakespeare to reimagining modern entertainment, Unreal Engine is giving developers the tools required to deliver lifelike performances. The latest version of the engine, 4.14, adds a new forward shading renderer with MSAA, native automatic LOD generation, multiple static lighting scenarios, built-in support for NVIDIA Ansel Photography and much, much more.

Download Unreal Engine for free at unrealengine.com. ■

ASK AMIQUS

Liz Prince, business manager at recruitment specialist Amiqus, helps solve some of the trickier problems job seekers currently face in the games industry

Q Dear Amiqus, What do you expect to be the biggest job opportunities in 2017?

During 2016 the games industry has evolved alongside technology as much as ever. A key expectation in 2017 is the move to 4k gaming. Once again we are set for another consumer choice of Sony vs Microsoft, this time between PlayStation Pro and Xbox One Scorpio. This step-change in visual capability is one area which is, according to The Guardian's Keith Stuart, "basically what PS4 Pro is all about – improved graphics fidelity". So what does this means for jobs?

4k Graphics

The lag between new tech releasing and adoption by independent developers is shrinking. In 2017 we can expect the consumer demand for 4k games to increase across the board, so the first challenge for studios will be delivering the required standard of graphics. Jobs which focus on graphical optimisation and rendering techniques are likely to increase. Graphics programmers who keep their tools skills up to date will experience the highest demand, which is likely to outstrip supply.

Programming

The continuous demand for programmers does not show any signs of slowing down. C++ remains at the heart of console development (not least for Unreal Engine) and is a great language choice for computer graduates to learn. Developers creating cross-platform experiences will also continue to provide jobs in C# and Unity so, again, graduates and experienced coders should see a range of opportunities in 2017. Mobile studios are expected to maintain the demand for iOS and Android skills.

As well as games for entertainment, serious and educational games are tapping in to the power of core languages providing a wide choice of jobs for coders. Through R&D, familiar games tech is expanding in to new areas of simulation as diverse as drones, surgical technology, product retail, A.I. development and big data algorithms.

Analytics

Tech Radar claims that "the two new pieces of hardware fundamentally change how consoles work". One such change is a further step toward the games as a service model (GaaS). Games using web-based infrastructure can be continuously updated based on an understanding of how the player behaves, elongating the game's lifespan. This meaningful human-computer interaction is informed by analytics and harnessed through monetisation. Whether or not F2P will fully flourish on consoles is another question, but the acquisition, retention and monetisation funnel applies across the board. While GaaS is not new, the increasing complexity and power of big data means that the importance of analytics for developers continues to grow. Jobs which address this need for interactive media intelligence, plus those with emphasis on balancing game design with monetisation will also provide career opportunities in 2017.

VR

VR brings new challenges when it comes to art and design. The complexity of interacting with a '3D' virtual world requires enormous detail in the behaviour of surfaces and lighting. To address this, the demand for art assets created using Physics Based Rendering (PBR) has been growing this year and is set to continue. This combination of visual and mathematical considerations will mean a higher demand in technical art positions.

Design

VR isn't only changing the core-gamer experience, but is also evolving quickly on mobile. Even where games don't require photo-realism, design aspects still have to address frame-rate, depth, in-game navigation, object interaction and more. We have seen a significant push for level designers in particular. Overlay this with the monetisation and balancing aspects and games design jobs in 2017 are set to have a rich and increasingly complex remit.

eSports

The increase in eSports businesses are a solid indication of growth. "SuperData Research has estimated the market to reach $1.9B by end of 2018, which would mean approximately one billion by the end of 2017," writes Aki Järvinen, Gaming Trend Analyst & Futurist. Here we anticipate jobs beyond the game, addressing community aspects in social media, PR, marketing and events. Community management in eSports is not only about keeping playing customers happy, but nurturing full-on engagement and events management on a massive scale. The events themselves provide sponsorship opportunities with vast exposure, so the need for sales, marketing and branding as well as event production will rise. ■

Liz Prince, business manager at recruitment specialist Amiqus, helps solve some of the trickier problems job seekers currently face in the games industry

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STAFF Q&A: Topher

Software Development Engineer. Joined: July 2016

You started Rare life as an intern – what was that like?

Intern life was far more hands-on than I could have expected! I was constantly being pushed just a little bit outside my comfort zone, but if it ever felt like too much it was easy to communicate that. It was nice to know I was being put through my paces but without the fear of burning out or getting overwhelmed.

> "It's always a little bit magical"

What made you decide to come back full-time?

Clearly the ice-cream van in the summer! As well as that, I decided 15 months at Rare just hadn't been enough for me. I'd seen Sea Of Thieves from its start as a baby, and knew I'd regret it if I missed out on the chance to be here when it finds its sea legs and ships out.

What's the best thing about working at Rare?

It has to be the general atmosphere and the people. It's always a little bit magical, and the gorgeous grounds for walking around really give you a great place to clear your mind and relax.

CURRENT OPPORTUNITIES

We're actively looking to fill the following roles, but even if your specialities lie elsewhere, we're always keen to talk to exceptional candidates. So if you think you've got the skills to make us sit up and take notice, get in touch: rarecareers@microsoft.com

Role	Contract	Location
Senior AI Programmer	Permanent	Twycross, UK
Software Development Engineer	Permanent	Twycross, UK
Art Director	Permanent	Twycross, UK
Lead Character Artist	Permanent	Twycross, UK
Lead Environment Artist	Permanent	Twycross, UK

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